

ORIGINAL ARTICLE

Development of a Patient-Reported Outcome Measure for Youth Receiving Gender-Affirming Care: The GENDER-Q Youth Module

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Abstract

Purpose: This study aimed to develop and establish the content validity of a patient-reported outcome measure for youth receiving gender-affirming care (GENDER-Q Youth).

Methods: This mixed-methods study involved concept elicitation interviews with youth who were seeking/receiving gender-affirming care (February 2019–October 2023). Data were used to develop a conceptual framework and set of independent functioning scales. Scales were refined through clinical and research expert input and cognitive debriefing interviews with youth (December 2023–April 2024). A pilot test was conducted to examine scale psychometric performance, overall content validity, and acceptability (July 2024).

Results: The concept elicitation interview sample included 47 youth aged 12–19 years. A conceptual framework with four main domains was created and included: health-related quality of life, gender practices, voice, and experience of care. To measure aspects of the framework, 17 scales (292 items) were developed and refined with input from 33 experts and 17 youth. The pilot test sample included 406 youth aged 18–25 years. Most respondents agreed that GENDER-Q Youth was easy to understand, thorough, asked important questions in a respectful way, felt safe to complete, and made them feel that their voice would be heard. The field test version of GENDER-Q Youth includes 16 scales (248 items).

Conclusion: Evidence of content validity of GENDER-Q Youth was established based on extensive input from experts and youth.

Keywords: gender-affirming care; patient-reported outcomes; patient-reported outcome measure development; qualitative research

Introduction

A key component that should be included in research on transgender and gender-diverse (TGD) youth is the perspective of youth who obtain gender-affirming care (e.g., hormonal care, mental health care, voice-related care, and other forms of social support). Youths' perspectives are typically assessed using patient-reported

outcome measures (PROMs). PROMs are questionnaires that measure how patients feel and function by asking them directly.^{1–3} PROMs play a valuable role in patient-centered health care by ensuring the patient's voice is incorporated into treatment-related decisions.^{4,5} For PROMs to fulfill this role effectively, they must have high content validity⁵; which means that the

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content is relevant, comprehensive, and comprehensible from the perspective of patients.^{1–3,6} Unfortunately, currently available PROMs are limited in scope or were not developed with or for youth who identify as TGD.

Two systematic reviews describe PROMs used to evaluate gender-affirming care outcomes in adolescent populations.^{7,8} Bowman et al. reviewed PROMs used to measure gender dysphoria in adolescents and adults and reported poor content validity across all identified instruments.⁷ Jackman et al. identified 38 PROMs used to measure outcomes of gender-affirming care for youth.⁸ The majority of PROMs identified measured psychological function and none included younger TGD youth (i.e., under age 17 years) as their target population. Furthermore, eight of the identified PROMs were generic quality-of-life measures.⁸ While generic measures can be useful⁹ such tools are not developed to measure the concerns of specific patient groups and therefore can lack content validity in specific contexts of use (i.e., TGD seeking gender-affirming care).⁵ Three PROMs were found that measure gender-specific concepts,⁸ but there is a paucity of evidence about how these PROMs were developed and validated. Therefore, the necessity still exists for a rigorously developed and validated PROM designed specifically for TGD youth seeking gender-affirming care.

To support future research and patient-centered clinical care, a robust and valid PROM for youth receiving gender-affirming care is needed. The present study aimed to develop a PROM called GENDER-Q Youth for TGD youth aged 12–25 years. The specific objectives of this study were threefold: (1) to elicit health-related concepts important to youth receiving gender-affirming care; (2) to use the concepts to develop a PROM; and (3) to pilot test the PROM in an online sample of TGD youth.

Methods

Overview of study approach

This study used a mixed-methods, multistep approach (Fig. 1) and adhered to international guidance for PROM development and validation (e.g., United States Food and Drug Administration, Consensus-based Standards for the Selection of Health Measurement Instruments [COSMIN]).^{1–3,6} We aimed to create a modular PROM composed of a set of independently functioning scales so that only the scales relevant to a specific research objective or clinical situation need to be administered.

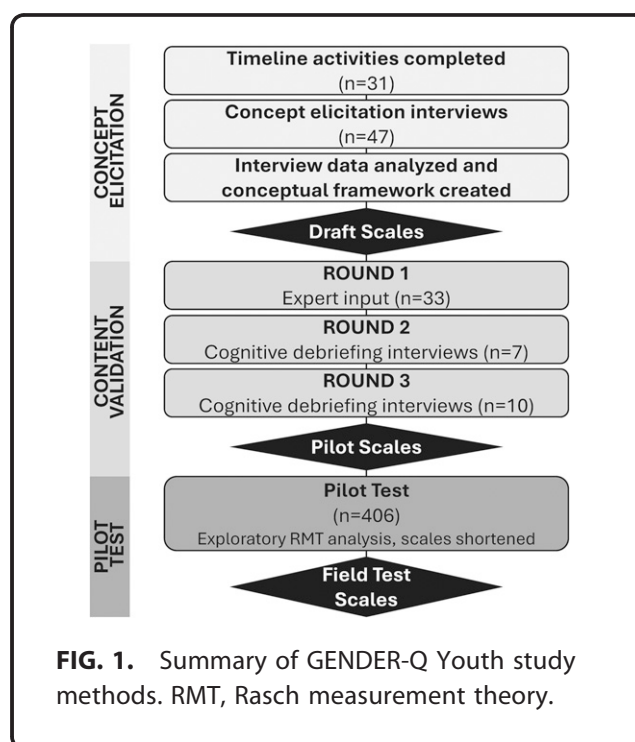


FIG. 1. Summary of GENDER-Q Youth study methods. RMT, Rasch measurement theory.

The current article describes the development of GENDER-Q Youth, which involved the following: (1) a qualitative interpretive description study^{10,11} that aimed to develop a conceptual framework and a modular PROM that consists of a set of independently functioning scales (November 2021–October 2023); (2) scale refinement through input from clinical and research experts and cognitive debriefing interviews with TGD youth (December 2023–April 2024); and (3) a quantitative pilot test to examine psychometric performance, overall content validity, and acceptability of the new PROM (July 2024).

Ethical considerations

The study was coordinated through McMaster University (Canada). Research ethics board (REB) approval was obtained from the Hamilton Integrated Research Ethics Board (#11103) and Children's Hospital of Eastern Ontario (#22/41X). Approval by the main coordinating site meant that the two United States (US) sites did not require separate local REB approval (i.e., they received "not engaged" status). A safety protocol was developed to promote participant and research team safety during data generation and analysis.¹² Written consent was obtained from participants and their parent/guardian if required by the patient's institution before data

generation; verbal consent was reaffirmed at the start of an interview.

Sample and recruitment

This study builds on the development of GENDER-Q, a PROM for adults seeking gender-affirming care.^{5,13} Specifically, concept elicitation interviews conducted for the GENDER-Q with Canadian and US youth aged 16–18 years were included in the GENDER-Q Youth sample. In addition, TGD youth aged 12–18 years who were seeking and/or receiving gender-affirming care and were able to communicate in English were recruited from three gender clinics in Canada and two in the United States. Youth were informed of the study by a member of their health care team. Interested youth either consented to be contacted by the research team or contacted the research team directly. Purposeful sampling⁶ was used to recruit a diverse sample that varied by age, gender identity, race, and type or stage of gender-affirming care received.

In Canada, youth were also recruited by either a community group leader or by a study participant (i.e., snowballing sampling) who provided information about the study to eligible youth; interested youth were able to contact the research team directly. Last, youth who took part in the GENDER-Q field test study who provided permission to be recontacted for future studies, and who met the GENDER-Q Youth study eligibility criteria were contacted by email and invited to consider participating in the study. Youth were offered monetary compensation (\$100 CAD/\$100 USD) upon completion of the interview.

Concept elicitation

The youth took part in an initial meeting (via phone or institutionally approved web conferencing platform [Zoom Version 5.8.4]) with a research team member (S.L.K.) to review the study consent forms and learn more about the study. An optional preinterview activity to create a timeline of their gender-affirming care journey was introduced.¹⁴ Instructions and activity supplies were sent to youth who expressed interest.

The concept elicitation interviews were conducted one-on-one by an experienced qualitative interviewer (S.L.K.) and audio-recorded using Zoom. At the start of the interviews, participants were asked demographic and clinical questions. The timeline activity (when completed) was used alongside an interview guide (Supplementary Appendix SA1) to elicit concepts. The interview guide was developed to reflect

the domains and major themes/subthemes found to be important to youth who took part in concept elicitation interviews to develop the GENDER-Q for adults.^{5,13} Interviews were conducted and analyzed concurrently so that GENDER-Q Youth interview data could be used to refine the interview guide for subsequent interviews.¹¹

Data analysis

Interviews were transcribed verbatim into Microsoft® Word (for Microsoft 365). The Word documents were de-identified, password-protected, and coded using the comments feature. The transcripts were coded by an experienced research team member (S.L.K.) and reviewed by a second team member (S.D.C.). Regular meetings were held to review the analysis and update the interview guide. Codes from each transcript were moved into Microsoft® Excel (for Microsoft 365) using Microsoft DocTools® software. Constant comparison was used to refine codes.

The data were analyzed and used to develop a conceptual framework and item pool. The item pool was created by one researcher with extensive experience writing items and developing pediatric and adult PROMs (A.F.K.). A draft set of independently functioning scales was developed using this item pool to measure key concepts from the conceptual framework. The draft scales were reviewed and revised based on feedback from members of the research team (M.N.K., C.R., S.L.K., S.D.C., S.M., N.J.). A document containing participant quotes to support the drafted scales was created. Supplementary Table S1 shows example quotes supporting items from each GENDER-Q Youth scale.

Scale refinement and content validation

To establish content validity, clinical experts in gender-affirming care and research experts in PROM design were invited to provide feedback on the draft scales.⁶ An internationally diverse group of experts, including quality-of-life researchers (identified through a quality-of-life-focused international organization's child health special interest group), clinicians across gender-affirming specialties (through our research team's network), and community leaders with lived experience (known to our team and involved in health care and transgender advocacy networks) were invited by email to review GENDER-Q Youth and to provide feedback using the comments or track changes features. Experts were instructed to

review as many scales as they were able to review and to provide feedback on the instructions, response options, and items, indicating if anything was missing, difficult to understand, or not relevant. Feedback was used to make changes to the scales (Round 1).

Participants from the concept elicitation interviews were invited by email to take part in a cognitive debriefing interview. An experienced qualitative interviewer conducted the interviews (S.L.K.), which were audio-recorded using Zoom. These interviews used the “think aloud” technique whereby participants were asked to review all components of each scale (i.e., instructions, response options, and items) to ensure that they were easy to understand, comprehensive, and relevant (Supplementary Appendix SA2, Interview Guide).^{15,16} Interviews were conducted in two rounds (Rounds 2 and 3). After each round, two research team members analyzed the interview data (S.L.K., S.D.C.). The results were reviewed by the research team and used to make changes to the scales. Participants received a gift card as a thank-you upon completion of their interview (\$100 CAD/\$100 USD).

Pilot field test

A pilot field test was conducted in July 2024 using an online crowdsourcing research platform.¹⁷ The Prolific platform is an online research database for individuals aged 18 years or older.¹⁷ Youth aged 18–25 years who identified as gender diverse and were residents of Australia, Canada, Ireland, New Zealand, the United States, or the United Kingdom were invited to complete a Research Electronic Data Capture (REDCap) survey, which included demographic and clinical questions, GENDER-Q Youth scales, and questions to evaluate the overall content validity (was easy to understand, was thorough, asked important questions) and acceptability (asked questions in a respectful way, felt safe to complete, and made me feel like my voice will be heard) of GENDER-Q Youth. Branching logic was used to ensure participants only received scales relevant to them (e.g., if they did not bind, they were not shown the Binding scale). Participants were compensated at a prorated hourly rate of 12.00 GBP.

Rasch measurement theory (RMT) analysis is a modern psychometric item response theory approach to scale development. In this approach, scales are developed “bottom up” from the qualitative data and then tested to see if data provided by a sample fits the requirements of the Rasch model. When data fit the

Rasch model the set of items of a scale should map out the construct along a clinically meaningful continuum providing interval level measurement.¹⁸ RMT analysis was performed using RUMM2030 software with the unrestricted Rasch model for polytomous scales (RUMM version 2030, RUMM Laboratory Pty Ltd., Duncraig, Western Australia, Australia, 1998–2023). RMT overcomes the limitations of other PROM development approaches (e.g., classical test theory) by providing interval level measurement.^{18–20}

In Rasch analysis, items with extreme misfits to the Rasch model were identified and removed (Round 4). The Flesch–Kincaid readability test was calculated for each scale (i.e., instructions, response options, and item set) to ensure that all scale components were at a reading level that could be understood by youth between 12 and 25 years of age.

Results

Concept elicitation

Data from eight youth who took part in the GENDER-Q concept elicitation study for adults between February 2019 and February 2020 were included in the present study.⁵ An additional 39 interviews were conducted between November 2021 and October 2023. Participants were from Canada ($n = 31$, 66.0%) and the United States ($n = 16$, 34.0%). At the time of the interviews, the youth were aged 12–19 years (mean = 16.5 years; 12–15 years = 8 youth, 16–19 years = 39 youth). Thirty-seven participants were assigned female at birth and 10 participants were assigned male at birth. Participants identified as boy or male ($n = 25$, 53.2%), girl or female ($n = 10$, 21.3%), nonbinary ($n = 11$, 23.4%), or preferred to not answer ($n = 1$, 2.1%). Most participants in the sample identified as White ($n = 38$, 80.8%). In terms of treatment, 37 participants (78.7%) reported having had pubertal suppression and/or gender-affirming hormones and 29 participants (61.7%) reported having had mental health care. The 47 interviews lasted an average of 105 min (range = 50–177 min).

Thirty-one participants completed the preinterview timeline activity. Timelines depicting the gender-affirming care journey were created on paper ($n = 22$), digitally ($n = 8$), or using a combination of paper/digital mediums ($n = 1$). Eighteen participants used only text in their timeline activity; others used text and images ($n = 12$) or only images ($n = 1$). A portion of a completed timeline activity is provided (Fig. 2). The timeline activities stimulated discussion and elicited

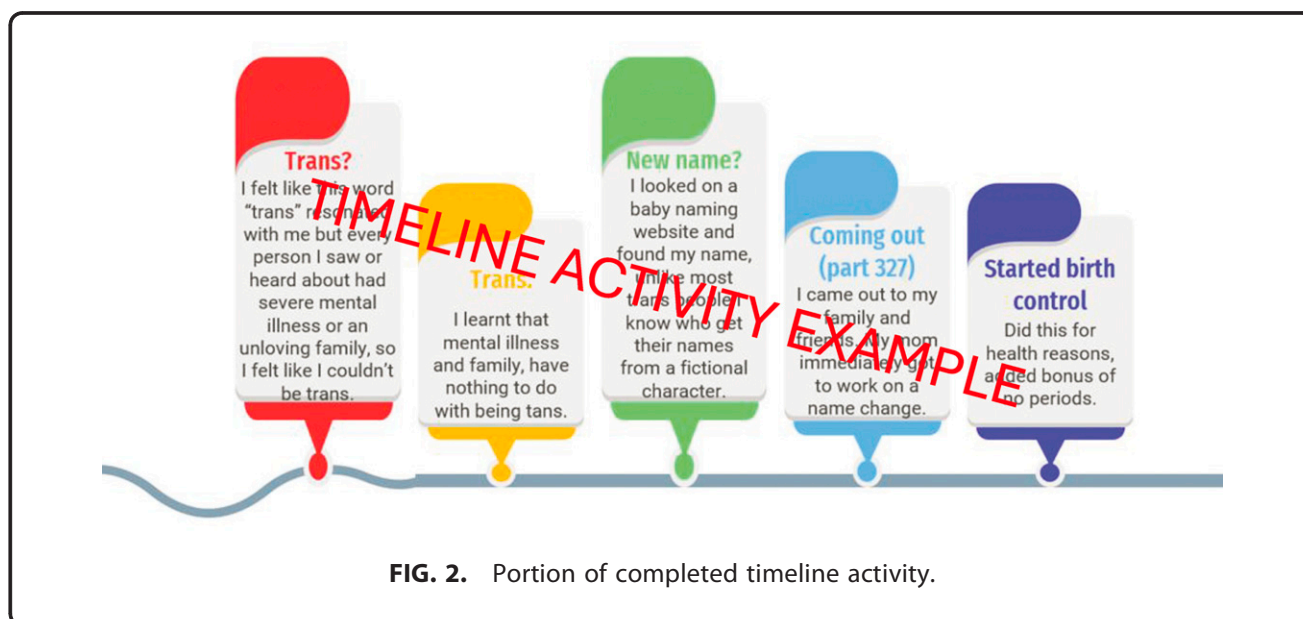


FIG. 2. Portion of completed timeline activity.

important concepts from participants that were used to create the PROM.

The timeline activities helped participants discuss their gender-affirming care journey and share concepts that may otherwise not have been discussed (*"I think [the timeline] was a good way for me to, like, look back at things that I would want to talk about [...] Talking about my different experiences with healthcare providers, that might not have been something that I had thought about."*). The timeline activities also helped to better understand how participants experienced important concepts, such as interactions with health care professionals (*"It's scary but if you get the right doctors it can go very well [...] so I was really happy to write that down and just to let people know that, like, it's not all bad. It can be really good."*) Ultimately, the timeline activities facilitated the generation of rich data during the concept elicitation interviews.

Conceptual framework

Analysis of the qualitative data led to the development of a conceptual framework that included four domains: health-related quality of life (HRQL), gender practices, voice, and experience of care. These domains covered a range of outcomes as well as experiences of care that mattered to TGD youth seeking gender-affirming care. Specifically, the HRQL domain covered psychological function (well-being, distress), body image concerns, and social function at school,

outside of school, and at home. The gender practices domain covered positive and negative aspects associated with binding and tucking. The voice domain covered how the voice sounds (e.g., too high or too low) and voice-related distress (e.g., feeling self-conscious). The experience of care domain covered the health care team (e.g., explained treatment options), information about gender-affirming hormones (e.g., impact on voice), and an evaluation of gender-affirming treatment (e.g., made life better).

To measure aspects of the framework, 17 independently functioning scales were developed and assigned instructions, a recall period, and a set of response options. Supplementary Table S1 shows the top key concepts with illustrative quotes that were elicited for each aspect of the conceptual framework. These concepts were used to form GENDER-Q Youth scales. Items for the scales incorporated participants' words as much as possible so that they would resonate with youth and were easy to understand. Of the 17 scales, 12 scales were designed to measure concepts using positive or neutral wording.

Scale refinement and content validation

Scale refinement and content validation were based on one round of expert input and two rounds of cognitive debriefing interviews with TGD youth. Table 1 shows changes made after each round to refine the PROM. Version 1 of GENDER-Q Youth included 17 scales and 292 items. Thirty-three of 41 invited

Table 1. Changes Made to GENDER-Q Youth Scales in Each Round of Scale Refinement

Domain	Scales	Round 1 (Expert Input)					Round 2 (CognitiveRound 1)					Round 3 (CognitiveRound 2)					Round 4 (pilot test)			
		V1	Retain	Revise	Drop	Add	V2	Retain	Revise	Drop	Add	V3	Retain	Revise	Drop	Add	V4	Retain	Drop	V5 ^a
HRQL	Body image	16	13	2	1	2	17	16	1	0	0	17	15	2	0	1	18	16	2	16
	Psychological distress	21	13	1	7	0	14	14	0	0	1	15	12	1	2	0	13	13	0	13
	Psychological well-being	15	12	0	3	2	14	14	0	0	1	15	14	1	0	0	15	14	1	14
	Life impact	17	0	9	8	4	13	12	1	0	0	13	12	1	0	0	13	13	0	13
	Family	17	10	5	2	3	18	18	0	0	0	18	16	2	0	0	18	17	1	17
Gender practices	Social	23	15	5	3	1	21	21	0	0	0	21	20	1	0	0	21	19	2	19
	School	26	18	5	3	0	23	23	0	0	0	23	18	2	3	0	20	19	1	19
	Teachers	13	6	6	1	2	14	14	0	0	0	14	14	0	0	0	14	13	1	13
	Binding: adverse effects	20	20	0	0	0	20	20	0	0	1	21	21	0	0	0	21	21	0	21
	Binding: well-being	10	10	0	0	0	10	10	0	0	0	10	10	0	0	0	10	10	0	10
Voice	Tucking: adverse effects	13	13	0	0	0	13	13	0	0	0	13	13	0	0	0	13	13	0	13
	Tucking: well-being	10	0	0	10	0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Distress	15	5	8	2	0	13	13	0	0	0	13	13	0	0	0	13	13	0	13
	Sound	16	11	3	2	2	16	16	0	0	0	16	16	0	0	0	16	16	0	16
	Health care team	32	26	2	4	1	29	28	1	0	0	29	29	0	0	0	29	26	3	26
EOC	Information: hormones	16	0	9	7	5	14	14	0	0	2	16	15	0	1	0	15	15	0	15
	Treatment outcome	12	9	0	3	1	10	10	0	0	0	10	10	0	0	0	10	10	0	10
Total		292	181	55	56	23	259	256	3	0	5	264	248	10	6	1	259	248	11	248

^aVersion 5 is the field test version of the GENDER-Q Youth Module.

EOC, experience of care; GENDER-Q, gender-affirming care; HRQL, health-related quality of life; V, version.

experts provided feedback (response rate = 80.5%) between December 2023 and January 2024. Experts were from Canada ($n = 15$, 45.4%), the United States ($n = 12$, 36.3%), Australia ($n = 2$, 6.1%), Denmark ($n = 2$, 6.1%), Germany ($n = 1$, 3.0%), and the United Kingdom ($n = 1$, 3.0%). Twenty-one experts (63.6%) were health care providers (e.g., adolescent medicine physicians, endocrinologists, mental health care providers, social workers, speech-language pathologists, surgeons), 9 experts (27.3%) were researchers with expertise in PROM development and/or gender-affirming care, and 3 experts (9.1%) were patient partners. Four experts (12.1%) self-identified as TGD.

At the end of the expert input round (Round 1 revisions), 181 items were retained, 55 items were revised, 56 items were dropped, and 23 items were added. One scale (Tucking: Well-Being—10 items) was dropped as it was deemed to not be highly relevant from the perspective of experts and was the scale with the least supportive qualitative data.

Seventeen cognitive debriefing interviews were conducted between January 2024 and April 2024 with youth who had participated in the concept elicitation interviews. At the time of the interviews, the youth were aged 14–19 years (mean = 16.5 years; 14–15 years = 4 youth [23.5%], 16–19 years = 13 youth [76.5%]). Participants identified as boy or male ($n = 9$, 52.9%), girl or female ($n = 5$, 29.4%), nonbinary ($n = 2$, 11.7%), or preferred to not answer ($n = 1$, 5.9%). Most participants identified as White ($n = 13$, 76.5%). In terms of treatments, almost all participants reported having had pubertal suppression and/or gender-affirming hormones ($n = 16$, 94.1%) and mental health care ($n = 14$, 82.3%). These interviews lasted an average of 93 min (range = 43–154 min).

In Round 2, Version 2 (259 items from 16 scales) was examined by seven youth. At the end of this round, 256 items were retained, 3 revised, 0 dropped, and 5 added. In Round 3, version 3 (264 items from 16 scales) was examined by 10 youth. At the end of this round, 248 items were retained, 10 revised, 6 dropped, and 1 added. Across the two rounds of interviews, each youth reviewed between 2 and 13 scales (mean 6.8, standard deviation 3.5), and each scale was reviewed by 7–11 youth (i.e., 8 scales were reviewed by 7 youth; 6 scales were reviewed by 8 youth and 1 scale was reviewed by 11 youth), except for the Tucking: Adverse Effects scale which was only reviewed by three youth.

Over the two rounds of cognitive debriefing interviews (Rounds 2 and 3), most participants reported that the instructions and response options for the set of scales were comprehensible and appropriate. In addition, most participants commented that the content of the PROM overall resonated with their experience and that the scales covered a comprehensive range of important constructs (*"I was looking at the questions and I couldn't really think of anything to add"*), and that the scales' content was appropriate (*"I liked every single one. There wasn't one [scale] that, like, I wouldn't find value in talking to my doctor about"*).

Table 2. Characteristics of Pilot Test Participants

	<i>n</i> = 406	%
Country		
Australia	21	5.2
Canada	33	8.1
New Zealand	8	2.0
United States	255	62.8
United Kingdom	87	21.4
Ireland	2	0.5
Age (years)		
18–19	65	16.0
20–21	105	25.9
22–23	141	34.7
24–25	95	23.4
Race ^a		
White	259	63.8
Multiracial	62	15.3
Black	28	6.9
Latin American	18	4.4
Southeast Asian	12	3.0
East Asian	12	3.0
South Asian	8	2.0
Other (Middle Eastern, Indigenous, Pacific Islander)	5	1.2
Missing	2	0.5
Gender identity ^a		
Boy or male	106	26.1
Girl or female	52	12.8
Nonbinary	233	57.4
Another gender	15	3.7
Sex assigned at birth		
Assigned female at birth	304	74.9
Assigned male at birth	101	24.9
I am not sure	1	0.2
Status of pubertal suppression and/or gender-affirming hormones		
Want never had	57	14.0
Received or having current	154	37.9
Do not want	78	19.2
Not sure, if want	117	28.8
Status of mental health care		
Want never had	103	25.4
Received or having current	239	58.9
Do not want	36	8.9
Not sure, if want	28	6.9

^aData were self-reported by participants and categorized by the research team for reporting.

Pilot field test

Version 4 of GENDER-Q Youth included 259 items. On the date of the pilot test, 1763 potential participants were invited to take part in the survey and 452 (25.6%) did so. We excluded duplicates ($n = 3$, 0.7%) and participants who failed to complete at least one scale ($n = 18$, 4.0%), were the wrong age ($n = 1$, 0.2%), and were cis-gender ($n = 24$, 5.3%). Table 2 shows the sample characteristics for the 406 participants. It took participants approximately 20 min to complete the survey (range: 7–54 min). In terms of overall content validity and acceptability, most respondents mostly or strongly agreed that GENDER-Q Youth was easy to understand, thorough, asked important questions in a respectful way, felt safe to complete and made them feel that their voice would be heard (see Table 3; 402 of 406 [99.0%]) participants completed the evaluation questions).

The RMT analysis identified 11 items from 7 scales with extreme misfits to the Rasch model, which were dropped (Round 4 revisions). The final field test version of GENDER-Q Youth contains 16 scales with 248 items. Scales have between 10 and 26 items. The overall Flesch-Kincaid Grade Level for each scale (i.e., instructions, response options, and item set) ranged from 0.5 (e.g., psychological distress) to 5.0 (e.g., family) (see Table 4).

Discussion

This study describes the development of GENDER-Q Youth, a modular PROM designed to measure a comprehensive range of outcomes and experiences of care for TGD youth aged 12–25 years. The field test version of GENDER-Q Youth includes 16 independently functioning scales that were developed from detailed concept elicitation interviews with TGD youth receiving gender-affirming care. Input from experts and youth was used to refine the instrument and provided evidence to demonstrate the content validity of this

new PROM. Each scale contains a comprehensive set of relevant items that are easy to understand by the target population. The pilot field test shortened the PROM and provided evidence of overall content validity and acceptability in a sample of TGD youth aged 18–25 years.

The GENDER-Q Youth development focused on obtaining high-quality concept elicitation interview data. The involvement of TGD youth who were seeking or receiving gender-affirming care in the PROM development process was essential to ensuring their unique voices informed the development²¹ and content included in the outcome and experience of care scales.^{2,3,6} Including a heterogeneous sample of youth from two countries with two different health care systems and political environments ensured that a diverse range of gender-affirming care experiences were captured and used to form the scales.^{2,6}

Most of the interview data were generated using the timeline activity, which proved to be an effective means of helping youth remember and discuss important aspects of their gender-affirming care journey that they might otherwise have overlooked. Using a combination of timeline activity and semi-structured interview guide enabled the collection of detailed and wide-ranging information about participants' experiences seeking and receiving gender-affirming care and about outcomes that mattered most to them. This study thus supports the use of novel techniques to enhance concept elicitation interviews in research with youth adding to the sparse literature on this topic in relation to PROM development.²¹

Limitations

A limitation of this study pertains to diversity within the qualitative study sample; most participants were White, and fewer participants were female-identifying. However, this study is in line with other research

Table 3. Responses to the GENDER-Q Youth Evaluation Questions ($n = 402$)

	Strongly disagree		Mostly disagree		Slightly disagree		Slightly agree		Mostly agree		Strongly agree	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1. ...was easy to understand	1	0	2	1	3	1	20	5	109	27	267	66
2. ...was thorough	1	0	4	1	5	1	24	6	114	28	254	63
3. ...asked questions that are important to me	1	0	4	1	11	3	64	16	128	32	194	48
4. ...asked questions in a respectful way	3	1	2	1	4	1	26	7	85	21	282	70
5. ...felt safe for me to complete	1	0	2	1	7	2	25	6	79	20	288	72
6. ...made me feel like my voice will be heard	3	1	1	0	16	4	57	14	109	27	216	54

Table 4. GENDER-Q Youth Field Test Version

Name of scale	Response options		Instructions		Items	
	Format	Response options	Timeframe	# of Items	Example item	Flesch–Kincaid Grade Level ^a
Body image	Always/never	4	Past week	16	I feel unhappy about how I look.	3.7
Psychological distress	Always/never	4	Past week	13	I feel angry.	0.5
Psychological well-being	Always/never	4	Past week	14	I like myself.	2.3
Life impact	Always/never	4	Past week	13	I am happy with my life.	0.9
Family	Always/never	4	Past week	17	My family treats me with respect.	5.0
Social	Always/never	4	Past week	19	My friends accept me.	1.7
School	Always/never	4	Past week	19	I feel safe at school (e.g., not bullied).	1.9
Teachers	Always/never	4	Past week	13	My teachers are easy to talk to.	2.4
Binding: adverse effects	Always/never	5	Past week	21	It is hard to breathe deeply.	1.8
Binding: well-being	Always/never	5	Past week	10	I feel good about my body.	3.1
Tucking: adverse effects	Always/never	5	Past week	13	My genitals hurt when I sit.	2.8
Voice distress	Always/never	4	Past week	13	I avoid talking at school because of my voice.	3.0
Voice sound	I like it very much/not at all	4	Past week	16	How your voice sounds when you talk loudly?	0.8
Health care team	Agree a lot/not at all	4	None	26	They helped me figure out what was best for me.	2.5
Information: hormones	I know a lot about this/I know nothing about this	3	None	15	... may change how you smell (your body odor)?	2.4
Treatment outcome	Agree a lot/not at all	4	None	10	The treatment has made my life better.	4.1

^aFlesch–Kincaid Grade Level for each scale, including instructions, response options, and item set.

showing a smaller sample of female-identifying youth in clinic-based recruitment.²² Second, one scale (Tucking: Adverse Effects) was only reviewed by three participants during the cognitive interviews, which is fewer than the number recommended by COSMIN.⁶ A third limitation was that the use of an online platform for the pilot field test did not allow us to verify the demographic or clinical information provided by participants. However, Prolific has been found to be of higher quality compared to other crowdsourcing platforms.^{23,24}

Last, youth aged 12–15 years were underrepresented, and youth aged 20–25 years were not included in the concept elicitation and cognitive debriefing interviews, potentially impacting the relevance and applicability of the GENDER-Q Youth across the full spectrum of adolescent and young adult experiences. Furthermore, the pilot field test included older youth aged 18–25 years and not the full age range for whom GENDER-Q Youth is designed (i.e., 12–25 years). The forthcoming international field test study will address these limitations by recruiting participants across the entire age spectrum. The differential item functioning of the scales by age group will be assessed to evaluate whether the scales perform consistently across developmental stages and to ensure the content remains valid and meaningful for all age groups.

Conclusion

GENDER-Q Youth fills a gap in the literature by providing the first rigorously designed comprehensive PROM that measures outcomes and experiences of gender-affirming care from the youths' perspective. The GENDER-Q Youth international field test study is now underway. Data will be used to shorten scales and examine their psychometric performance. Once development is finished, this new PROM could be used before, during, and after treatment to ensure that the perspectives of TGD youth inform their gender-affirming care (e.g., shared decision-making). GENDER-Q Youth could also be used in clinical trials of treatments and in other studies designed to examine factors (e.g., sociocultural and political) that influence outcomes important to youth.

Authors' Contributions

S.L.K.: Methodology, formal analysis, investigation, writing—original draft, writing—review and editing, and project administration. S.D.C.: Formal analysis and writing—review and editing. M.N.K.: Methodology, formal analysis, investigation, writing—review and editing, project administration, and funding acquisition. S.M.: Resources, writing—review and editing, and supervision. C.R.: Formal analysis, investigation, writing—original draft, writing—review and editing, and project

administration. N.J.: Resources, writing—review and editing, and supervision. K.K.: Resources, writing—review and editing, and supervision. K.A.: Resources and writing—review and editing. M.M.: Resources, writing—review and editing, and supervision. G.S.: Resources, writing—review and editing, and supervision. B.B.: Resources and writing—review and editing. A.F.K.: Conceptualization, methodology, formal analysis, investigation, writing—original draft, writing—review and editing, supervision, project administration, and funding acquisition.

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Supplementary Material

Supplementary Table S1

Supplementary Appendix SA1

Supplementary Appendix SA2

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Abbreviations Used

CAD = Canadian dollar
COSMIN = Consensus-based Standards for the
Selection of Health Measurement Instruments
GBP = British pound sterling
HRQL = Health-related quality of life
PROM = Patient-reported outcome measure

REB = Research ethics board
REDCap = Research Electronic Data Capture
RMT = Rasch Measurement Theory
TGD = Transgender and gender-diverse
US = United States
USD = United States dollar

Supplementary Table S1: Key concepts for each domain by subtheme with example quotes to illustrate participants' experiences

Health-related quality of life – school codes with example quotes	
1. Be myself	<ul style="list-style-type: none"> • It felt like I was almost pretending not to be trans when I was trans. (3) • So, it says here, 'I began a double life', which I still do have a double life. (27) • It's ... it's allowed me to be myself, both on the inside and outside. (35)
2. Feel safe	<ul style="list-style-type: none"> • Like, I don't really feel the safest at school right now because of it ... it's okay, nothing has happened, yet. (4) • And the first year, I was bullied relentlessly. I was bullied pretty much all throughout my time there. (28) • There were people who would push me around in hallways, slam doors on me, and punch me and stuff. (42)
3. Restroom	<ul style="list-style-type: none"> • Like, I almost peed myself at school because I didn't want to use the girls' washroom. (41) • Now if I do have to go to the bathroom at school, which I very, very much try not to do, just because it's a hassle, I do use the men's restroom. But I'm the type of person who will only go if nobody else is in there. (7) • I didn't use the male bathroom at my old school just because that was definitely putting my safety at harm. But we had one gender neutral washroom, and it was at the back of the school in an unmonitored place, and I used that bathroom. And there would often be, like, a group of kids that would stand outside that would stand there to harass kids and the office knew that this was a problem, but they didn't really do much about it. (24)
4. Pronouns	<ul style="list-style-type: none"> • [Interviewer]: have you asked your classmates to use your name and ... and pronouns? [Participant]: Yeah. Uh, yeah. Everyone's pretty cool about it. (14) • So, then, I started my 8th Grade with, like, new name, new pronouns, coming out to my school, coming out to all my peers and teachers. Took them ... it took them, like, a year or two to catch on (18) • And as for the people who didn't take it so well, it's a lot of people are just saying, like, the same stuff about how pronouns don't make sense so they're not gonna respect it and a lot of ... because I went to a religious school before and I grew up around religion, a lot of people were also saying that it's against their religion so that they wouldn't talk to me anymore. (24)
5. Change room	<ul style="list-style-type: none"> • Locker rooms are extremely hard. Even if I went in ... if we had locker rooms this year and I went in the men's locker room, I still have top surgery scars and everyone in that classroom would know that I'm trans. And I don't want people to know I'm trans, because these kids suck. And locker rooms are overall very hard in general. (7) • Not good. I just felt really self-conscious about changing in front of other guys. It was really awkward. So, I would just change in the washroom instead. (11) • ... in the start of seventh grade, that's when I started changing in the boys' locker room which, like, it's so messy and smells so bad. But it gives me such a gender euphoria and it makes me feel more connected to my gender identity (25)
6. Accepted	<ul style="list-style-type: none"> • I was never, like, the smartest kid in the class so, like, being the tomboy, like, that kind of just became, like, my 'thing', I guess, where like, yeah, like, and everyone kind of accepted me, I guess, with that point. (22) • And I noticed, like, in some of my classes, in my art class or something, people would go by different names and pronouns and so I felt comfortable in certain spaces to kind of do the same. And it was one of my first kind of experiences of being accepted by people (31) • My school is very diverse. It's very, like, accepting of everybody. (33)
7. Nice to me	<ul style="list-style-type: none"> • The students, like I said, they have all been very nice except for 1 or 2, but they don't really matter. (3)

	<ul style="list-style-type: none"> • I don't know, everyone's really friendly and, like, nice and I don't, yeah, I feel safe walking around and stuff, I just don't know people that well (29) • My school ... I went to a small elementary school, so people were pretty progressive, but at the same time, kids are not nice people (laughing) and I was bullied a lot. (47)
8. Fit in	<ul style="list-style-type: none"> • I'll just be sitting in my classroom, and I'll think about the fact that I'm not like the other guys in this classroom, because I'm trans. I prefer to feel that I fit in, but of course that can't really happen. (7) • Like, there was definitely certain groups of people who hung out together and it was mostly all girls or all boys, and I didn't really fit in with either of them. (21) • But I did have a lot of female friends who would then say, 'oh we should all wear dresses to school today'. And I would be like, 'ohhh, OK. I'll wear a dress with you guys'. Just to fit in and be a part of the group. (44)
9. Supportive	<ul style="list-style-type: none"> • Because there is a lot of people in my school who would obviously not be supportive. (7) • I had quite a few friends who were very supportive of me. They didn't really care if I was transgender that much. (12) • I ... you know, at that point, I didn't really have a whole lot of friends. I did have one friend who, you know, has since come out as non-binary, also, who is very supportive of me. (16)
10. Make friends	<ul style="list-style-type: none"> • I was never very good at making friends. (44) • I definitely found it easier to make friends after I came out and it's been easier to make friends now. (47) • It's ... was very hard to work with the triggers because everyone has triggers and it was, like, you're trying not to trigger people so that was also hard to make friends but the friends I do make, or did make, was ... was, again, like, LGBTQ so it was able for me ... sorry, it was easier for me to relate to them and talk about my issues around them. (26)
Health-related quality of life – teacher codes with example quotes	
1. Use pronouns	<ul style="list-style-type: none"> • ... the people that I was with all the time, and my homeroom teacher, it probably took about, like, six months for them to regularly be using my correct pronouns. (2) • All of them [teachers] are very inclusive and they use my pronouns or ask my pronouns. (15) • But I had some teachers that didn't respect the name and pronouns of me or even other people in my class. So those classes weren't as fun (24)
2. Nice to me	<ul style="list-style-type: none"> • All of the teachers are super, super nice. (34) • And I especially liked the running club for the 5K run, because I was at roughly the same pace as my English teacher, and he was really nice and supportive. (45) • Yeah, she was the only other one at the school that I had to, like, come out to, 'cause she was, like, the only other one that I, like, really knew, I guess, but yeah, she was really nice and really supportive (29)
3. Supportive	<ul style="list-style-type: none"> • I feel like my science teacher that I mentioned before, she was definitely a big person in my life and was very supportive. (8) • So, having, yeah, having teachers' support has been the most helpful thing for me and make me feel welcome at school. (15) • My teachers are the most supportive teachers I've ever had. Like, they take a lot of time to make sure just I'm doing generally well for my mental wellbeing and letting me have, like, spaces I need at the school if I need it. (24)
4. Treat me well	<ul style="list-style-type: none"> • ... whereas most of the male teachers, I just don't like them. Yeah. They are sexist and not fun to deal with (46)

	<ul style="list-style-type: none"> • My gym teacher was probably the most conservative person in my school at the time and he kind of...he treated me definitely kind of weird. (47) • They've just...I...I don't know, they've just been, I guess, nice. I haven't had any problems with anyone at school, so it's been good, and teachers have been great. (27)
5. Care about me	<ul style="list-style-type: none"> • And having supportive teachers that love me and care about me. Not only about me, as a person, but also about my education. That has been really, really crucial. (15) • Telling my teachers. I can't really remember besides my history teacher. But I just remember it was very awkward. None of them really cared. (7) • My teachers didn't care about me. (42)
6. Stand up for me	<ul style="list-style-type: none"> • I've had a couple good teachers that would even correct students in the chat about my pronouns or classmates' pronouns and name and just, generally, the teachers using my name and pronouns, like, for attendance or for anything was just really nice. (24) • She's [teacher] really good with keeping, like, keeping me away from getting, like, bullied and stuff like. She's always there. (26) • ... the positive space teacher would fight for me. She was like a mama bear. If anyone misgendered me in front of her, she would be like, 'um excuse me! He goes by 'he'. His name is [Patient Name]. Be respectful.' (41)
7. Easy to talk to	<ul style="list-style-type: none"> • Yeah, being able to confide with teachers. Like, a lot of my friends at school are the teachers. (15) • I also had my music teacher from high school that I still talk to. Like, she really, really helped me. (20) • I came out to my favourite teacher about being gender fluid and he was extremely happy I trusted him enough to tell him 'cause I think ... he was a very young teacher ... so he felt, like, really excited that a child was able to connect to him for, like ... and be able to come out to him ... 'cause he was, like, the first adult I came out to. (25)
8. Treat me with respect	<ul style="list-style-type: none"> • Quite a few of my teachers did know and they were all very respectful of my identity. (12) • And then she proceeded to misgender me even after I said I would like to use 'ello' which is the masculine term [in Spanish] because I just didn't want to use 'ella' so ... but then she wouldn't respect it. (14) • And there were definitely a couple of teachers who, you know, really supported and respected me but the majority didn't and there weren't a lot ... you know, several teachers who intentionally misgendered me. (15)
9. Understanding	<ul style="list-style-type: none"> • There were teachers who didn't understand and didn't really know how to ... it was more that they were uneducated rather than unwilling. (42) • I had a biology teacher who was actually teaching the class about transgender people, and she came and asked me before she started, 'hey is this, does this class look good? Is everything right? Are you comfortable with this?' And I was like 'yeah, it's actually good that you are teaching people about this, so they understand.' (12) • No, when I was younger, I kept a lot of my stuff to myself because I learned very early that my teachers were not on my side. (30)
10. Accepted	<ul style="list-style-type: none"> • And when I think about, you know, like, the teachers, when I was younger, who accepted me, that makes me happy because it really ... I feel like those people really impacted my ability to, like, stand up for myself when things do happen that are difficult. (15) • And, you know, there was also that teacher who told me, she ... she would never see me as a boy or something like that and most ... most of the time, like, I don't think teachers would, specifically, say anything, it was just I felt uncomfortable and like I wasn't accepted. (16)

	<ul style="list-style-type: none"> • My teachers at my school are very, very, very accepting. And I'm pretty lucky for that. (28)
Health-related quality of life - social codes with example quotes	
1. Talk about feelings	<ul style="list-style-type: none"> • I'm doing gender neutral housing [at college], so a lot of people understand what being trans is like, so we can discuss the issues I'm going through. (8) • They were all good friends. They offered to be someone to talk to if I needed someone to talk to. (11) • But, like, a lot of my new friends, it feels a bit uncomfortable talking to them about my dysphoria and about, like, the things I go through because I know they can't relate. And I just don't really ... I'm not friends with too many trans people so it's a bit hard to find someone to talk to about it. (23)
2. Confident when go out	<ul style="list-style-type: none"> • Like, going out in public is so much easier. Like, I don't have to constantly think about, like, is my position correct? Am I hiding my chest enough? (15) • Or, you know, I ... so that [testosterone] really helped, helped me get out in the world and, I guess, just live a ... a typical life, I guess, 'cause I ... I just hadn't been, beforehand. I was just so caught up in the way that I wanted to be perceived by other people and even to perceive myself. (21) • I feel more safe with the way I present and, yeah, there's just kind of that safety that came with starting Lupron and testosterone. And I feel safer being in society and in public now. (22)
3. Fit in	<ul style="list-style-type: none"> • I never felt that I fit in with the girls. (3) • That has always been an issue for me. I've never felt like I belonged anywhere. (15) • And then it was ... a lot of finding my place like where I fit in the world I guess, socially and what made me comfortable and whatnot, and how I could do things and put myself in situations where I was being presented as who I wanted to be and who I am. (45)
4. Understanding	<ul style="list-style-type: none"> • I have ... my best ... like, best friend, at the moment, is also trans. So, it's a lot easier to relate to them and to, like, hang out with them and, yeah, and talk. (23) • And so I was able to meet up with a lot of people who understood, kind of, what I was going through, and I understood them so that helped with making friends, 'cause we kind of understood each other. (26) • I had different in-person friends who I mentioned gender and, like, the concepts and, like, my struggle with it to sometimes but they didn't really understand. (32)
5. Accepted	<ul style="list-style-type: none"> • They are all very open-minded and really accepting, supportive of transgender people in general. (12) • And the people I chose to come out to, was because I felt safe around them and they all were quite accepting, which was nice (36) • [Participant]: I tried to tell friends, but then they just laughed at me. [Interviewer]: And how did you feel? [Participant]: It doesn't make you feel good. I already got laughed at for a lot of things and made fun of for a lot of things. So, that was kind of another thing that people could make fun of me for. (42)
6. Okay when people look at me	<ul style="list-style-type: none"> • I had been getting stared at a lot this year. Getting stared at is kind of upsetting to say the least. Like I don't really feel the safest at school right now because of it ... it's okay, nothing has happened, yet. (4) • ... she was just staring at it. I was like, stop looking at me like that. You wouldn't like it if I did that to you. (46) • ... so, it was kind of small things like that that don't seem like a lot by themselves but when they're kind of stacked up on top of each other and, like, dealing with how other students kind of looked at me weirdly and kind of isolated themselves from me, it was just kind of a lot to deal with. (31)

7. Fun with friends	<ul style="list-style-type: none"> ... sometimes I hang out with my friends; sometimes we go to the mall or I have friends over and we ... we watch videos or we bake stuff or we do, like, we go out for walks or I go to the museum with them. So, that's, basically, what me and my friends do together outside of school. (33) ... it sucked because with your friends, you kind of run around and stuff. And you do fun things. But I couldn't do anything like that. And I couldn't catch up to people if they were running across the street because it would hurt [because wearing a binder]. (3) I guess just having someone to talk to when I'm feeling upset or just to hang out with and play games with or watch movies. (27)
8. Make friends	<ul style="list-style-type: none"> I've always kind of known, like, who my crowd is; who I know will accept me for who I am and who won't. So, I've always just avoided people that give me an 'off' feeling and I've never tried to make friends with popular people. (15) I did make new friends from coming out. People who are going through the same thing, people who are also trans or just queer, in general. (24) Never really been great with friends. I never really had male friends though. I was always more female friends. I've had probably one or two really close male friends in my entire life. (44)
9. Use pronouns	<ul style="list-style-type: none"> [Interviewer]: And who were you using those pronouns with? [Participant]: Just my close circle of friends. So, like, three people. (2) I really hate it. I, like, wish people, like, actually said, like, my correct pronouns but, like, nobody does. Like, it's only my friends. (25) So, I have lucked out with that. In that sense, they [friends] were immediately very accepting about it and tried their best to switch over to my he/him pronouns as soon as they possibly could. (44)
10. Be myself around friends	<ul style="list-style-type: none"> Amazing sense of belonging. New friends. They were all like me. (7) All my friends are all super chill and they didn't care what you identified as, what you had in your pants. They didn't care. They were like, 'hey if you're cool, you're cool.' So, I had decent friends. (43) ... basically, the people I told were the ones I met online who were already aware of or a part of the trans community or supporting other trans friends or just, like, in the, like, online environment. So, they were fine with it. Like, they were good (32)

Health-related quality of life - family codes with example quotes

1. Supportive	<ul style="list-style-type: none"> [Interviewer]: Who do you have in your life that supports you? [Participant]: Well, my family. (1) I did lose a lot of my family due to my identity, specifically, my dad cutting off contact with me. I wrote a letter to him explaining my identity. I got no response. (22) But my older sister and my twin sister were both very supportive of me. (20)
2. Use pronouns	<ul style="list-style-type: none"> ... they don't really remember to call me by my preferred pronouns or name. They usually remember my name more. (3) She supports me by using my correct name and pronouns. She has never argued with me about it. She has been very good about that ever since I was young. (12) So, they basically, started using the right name and pronouns, like, immediately, which really surprising, like, that they were really good with that (32)
3. Accepted	<ul style="list-style-type: none"> So, it was like ... mostly 'out' to everyone by the time that I was 13, just my parents weren't accepting. (42)

	<ul style="list-style-type: none"> • I'm pretty sure right now the reason he [father] is not accepting of it, is because he thinks I'm going to de-transition, and he thinks it's just a phase. That's actually something he actually said to me. (7) • I was happy when I was thinking about the people who did accept me. Like, my...my big sister is probably my biggest supporter I have. (15)
4. Understanding	<ul style="list-style-type: none"> • ... but I do try to talk to my grandma more and explain things to her, because, they definitely didn't understand. They [grandparents] went with it, because they love me, but they don't get it. So, I try to explain it to them a little bit. (7) • But my step-dad, I don't think he really cares or understands at all, so it wouldn't be helpful to talk to him about that sort of stuff. (8) • My mom, like, fully understands me. Like, it's ... I honestly don't know how she understands me, it's like, really good because, obviously, like, she grew up with a different mentality and the same way that I'm educating myself about me being trans, 'cause you always learn ... you always learn more ... she's also educating herself through me. So, our connection is, like, really strong (25)
5. Treat me well	<ul style="list-style-type: none"> • They treated me the same. Besides changing my pronouns, they didn't make me feel like I was, suddenly, a completely different person. They treated me as they've always treated me. And that felt pretty nice, them not treating me different, just 'cause I was out now. Just because I wanted to be a girl didn't mean they treated me any differently and that made me pretty happy. (17) • Everyone was just really, like, nice and supportive and my sibling was just, like, nice to talk to, 'cause, like, he went ... you know, like, he figured everything out, he went through that, he came out, so he was just the first person I thought of to, like, you know, like, start with him and then go to everyone else. But yeah, he was just, I don't know, my whole family was really just nice and supportive (29) • My dad didn't really know how to treat me. I think he just thought I was a different person, which obviously isn't true. He was just kind of confused by it. There was a little bit of awkwardness around that. (47)
6. Accept how I choose to look	<ul style="list-style-type: none"> • It took ... it took a while for my parents to get used to it. They were ... they were supportive of me cutting my hair to, like, you know, right here. And, I mean, I'd had long hair my whole life so, obviously, that took a while for them to get used to. (15) • And even, one time I went shopping with my grandma, as well, and we went in the men's section, and she was completely fine with it. (19) • So, it was, like, noticeable to other people and it made them uncomfortable but, her especially, she was, like, upset with me. She was like, 'Why are you doing that?' Like, "Don't be ashamed of your figure, nothing is ... 'you know, yeah, so, it was a little bit uncomfortable because I knew that I was doing what made me comfortable but that it made everybody else around me just kind of look at me in a different light. (20)
7. Care about me	<ul style="list-style-type: none"> • They went with it, because they love me, but they don't get it. So, I try to explain it to them a little bit. (7) • So, I don't really feel that bad bashing her 'cause she's proven multiple times that she doesn't really care. (35) • My Nana said, she said, like, 'even if I don't fully understand it, that doesn't mean that I should treat you or love you any differently or less and stuff.' (3)
8. Take me seriously	<ul style="list-style-type: none"> • And also, I think my family didn't really take the gender identity thing seriously. (15) • 'All right, we're gonna start helping you now.' They [parents] didn't wait, they didn't go, 'Let's think about this first. Let's really think. Let's really think this is what you want?' They immediately said, 'All right, if this is what you want, how do we help you for this?' And that felt pretty good, them not questioning me on it. (17)

	<ul style="list-style-type: none"> ... there's also, like, family who believes, like...like, they don't believe in, like, my ... how do they say it ... like, they don't believe that I'm [Participant]. They believe I'm still my dead name. So, they say it's just a phase. Like, it's just like a ... like a ... like a childish thing. I can't ... it's not really like a phase, more like a ... yeah, you know, something that's currently going on and I'll get over it, eventually (25)
9. Listens to me	<ul style="list-style-type: none"> I told my mom, like, twice, and she shut me down both times. So, I didn't feel that I could bring it up to her anymore. (4) I mean, I think the ... the ... she is ... she [sister] does the most important thing which is just being willing to listen (16) And, I don't know, just a lot of arguing [with mother] almost on a daily basis, and any time I mentioned my gender identity, another fight would start. (21)
10. Talk about how I feel	<ul style="list-style-type: none"> ... it doesn't feel ... I don't really feel open to talk about them [family] ... about ... like, talk to them about the stuff that I go through relating to being trans, like, a lot of the dysphoria and stuff just because I know they won't really relate and although I know that they're gonna, like, listen and try to understand, it's still just like, eh, it's just not really something I talk about. (23) But she [mother] is someone that I could feel comfortable talking to about how I feel, and she is someone who has been involved in, like, my steps in my medical journey. (24) I told my mom about a lot of stuff but not necessarily about what was going on at school. (30)
Health-related quality of life - life impact codes with example quotes	
1. Family life good	<ul style="list-style-type: none"> I was remembering how happy I was that my mom would let me be transgender and be who I want to be. (1) Like, they have ... they [family] have demonstrated that they care about my boundaries and my well being and respect me deeply, and so I'm able to talk to them about pretty much anything. (13) ... just having her [mother] around definitely helps and makes it a lot easier and a lot more comforting 'cause then we can spend time together ... 24 hours with her...not 24 hours but a lot of time with her just for bonding and stuff like that. (26)
2. School life good	<ul style="list-style-type: none"> It was a challenging time, and I ran into a lot of transphobic and homophobic people in that high school. (45) So, school is pretty hard when you are trans. (7) I haven't had any problems with anyone at school, so, it's been good, and teachers have been great. (27)
3. Like voice	<ul style="list-style-type: none"> And I don't have any voice dysphoria now and I wouldn't change anything about my voice at all. (12) Um ... I had voice issues. I didn't like the pitch of my voice, it was too high. (13) I like my voice sounding deeper ... (45)
4. Like how look	<ul style="list-style-type: none"> I don't look in the mirror most days, because I don't like it. (45) I bought a dress shirt and a tie and a pair of pants that looked pretty masculine, and that felt, like, amazing at the time. (2) I am pretty OK with my appearance. (12)
5. Like body	<ul style="list-style-type: none"> Incredibly dysphoric and hating my body and depression getting far worse. (6) Things are changing and I've become a lot more comfortable with myself as a person and, like, with my body and just accepting it and enjoying it as it is. (31) That feels way better ... having my body look different. (17)
6. Happy with social life	<ul style="list-style-type: none"> I have quite a few friends and a lot of them are also transgender or non-binary. So, that's definitely a good support system. (12) I just feel a lot more ... a lot more comfortable doing that stuff [speaking in public] and ... and, you know, living ... living my life. (18)

	<ul style="list-style-type: none"> I was just hanging out with different people. More girls. I would ... I remember going to some of their parties and stuff like that. So, I definitely had more of a social life after I came out. (47)
7. Fit in	<ul style="list-style-type: none"> And I just remember not really feeling like I fit in with the girls the ... the way that I thought I was supposed to. (16) And I remember, like, being so excited and getting to play, like, soccer on the field and getting them [trackpants] all dirty and I just, like, at that moment, I felt like I fit in with, like, a group. (22) Even with my friends, I had a friend group ... I was friends with both boys and girls when I was little, but mainly boys, and I felt different, I guess. Like, I didn't really fit in with them, because they would play soccer, and I didn't really like playing soccer. And I just ... I felt alienated from that. And I felt a little bit like I didn't belong. (47)
8. Mental health good	<ul style="list-style-type: none"> [Interviewer]: If there was anything that you wanted to share with me about your mental health and maybe how that has changed since receiving gender-affirming care? [Participant]: Well, obviously it's improved greatly. (3) [Interviewer]: I was going to ask if you feel your mental health has changed since receiving gender affirming care? [Participant]: Yes definitely. It's definitely improved a lot. I have a lot less dysphoria and I feel a lot more confident, and happy with my body. (12) I think ... I think, right now, my mental health has probably been the best it's ever been. (15)
9. Happy with life	<ul style="list-style-type: none"> It's honestly changed my life in so many ways and I'm so much happier because of it. (47) I have the space to feel sadness and anger about something other than my gender identity or how I am, and I can be happy about things (15) I just felt a lot happier and a lot less worried about, like everything. (23)
10. Express gender	<ul style="list-style-type: none"> [Interviewer]: And after you cut your hair, how did you feel? Like, when you would see yourself in the mirror with your short hair? [Participant]: I was happy. It wasn't the nicest haircut, I'll admit. But it was shorter hair, and I felt more comfortable with it (10) So, getting rid of all of that hair, really opened me up, literally, to, like, writing a new script for myself and discovering more areas of self-expression outside of clothes or different, you know, colours, all of that. (15) And ... so, clothes really are important for my, like, feeling about how I want to look and what sort of like, what sort of understanding of gender I want to present. Because, I mentioned earlier, I feel a little bit gender fluid and so, that ... so, clothes really help me express that. (14)
Health-related quality of life – psychological well-being codes with example quotes	
1. Comfortable with myself	<ul style="list-style-type: none"> Just ... just generally feeling more comfortable with who I am now. (19) And I ... it ... it just felt wrong and uncomfortable and there's not really an easier way to explain that. (24) Things are changing and I've become a lot more comfortable with myself as a person and, like, with my body and just accepting it and enjoying it as it is. (31)
2. Happy	<ul style="list-style-type: none"> But then I kind of, you know after all that experimentation, settle on they/them pronouns, it makes me the happiest. (20) I feel like I look so much better and I'm just so much happier all the time. (33) I just felt a lot happier and a lot less worried about, like, everything. (23)
3. Confident	<ul style="list-style-type: none"> It's definitely improved a lot. I have a lot less dysphoria and I feel a lot more confident and happy with my body. (12) Everything, really, has shifted. Especially with my confidence in being someone. Being a person in society, in general. (15) It's made me a lot happier. I ... and a lot more confident in myself and the way I look. (3)

4. Good about how look	<ul style="list-style-type: none"> • But afterwards, it would feel really good to, like, have muscles and notice them and that would feel euphoric. (14) • Yes, again, subconsciously, 'cause I didn't like what I looked like. It felt wrong. (17) • it's really helped me, like, go out and, like, like the way I look 'cause before, I hated...I couldn't look at myself in the mirror. (33)
5. Happy with life	<ul style="list-style-type: none"> • ... after top surgery was probably, like, the first ... the first four months were, like, the most peaceful and happy months, like, ever. It was such ... like ... like a special, like, unwavering type of euphoria. (32) • And I've been happier since I started transitioning. (4) • So much more open; so much more talkative, so much more happy. So, I get ... Mom described it as, again, a 'new person', kind of. Everything was just way better. (17)
6. Like myself	<ul style="list-style-type: none"> • It's just difficult when I don't like myself. (10) • But ... oh, also during that time, I kind of felt a lot of hatred towards the way that I used to look. (21) • But I think my physical dysphoria came along with a lot of self-hatred and just hating my body a lot and everything about it. (45)
7. Great about myself	<ul style="list-style-type: none"> • [Participant]: I painted my nails. Trying on makeup. Trying on women's clothes and stuff. [Interviewer]: OK. And how did that feel for you as you were doing these different things? [Participant]: Amazing. Great. I felt like myself. (11) • I don't know. I just haven't been feeling great lately. (46) • Well, I definitely feel better about myself. (42)
8. Proud of myself	<ul style="list-style-type: none"> • I like ... you know, I'm proud of ... of being transgender and I ... I enjoy it. (16) • I've made a lot of improvements in my mental health. I'm proud of that. (45) • And, like, that's because, most of the time, they're proud of being trans. And, like, so am I. (25)
9. Accept myself	<ul style="list-style-type: none"> • I've become less socially awkward, that was a main issue ... that was a big issue I had. I've become less self-critical. I've become much more accepting of myself and that I'm not perfect all the time, believe it or not. (35) • I've just become more comfortable with my body and more accepting of it. And even though there are things that I would love to change about it, I have accepted the fact that I can't right now and when I'm at home by myself, I don't need to be uncomfortable. (45) • But yet, instantly after I came out, everything was so much better. Mom described it as I was a completely different person after, like, accepting myself.
10. Feel hopeful	<ul style="list-style-type: none"> • [Interviewer]: Are there any ways that you're hoping being on testosterone will change, like, your mental health? [Participant]: Yeah. So, so far, what I've noticed is, Number 1, the fact that it ... even just being on my puberty blockers has helped with my mental health because it has made me realize that it is happening and, sooner or later, that I will, hopefully, have at least a bit more masculinity as a part of my body. Yeah, so I'm...I'm very hopeful that it will help with my mental health and stuff like that. (26) • We met with [Doctor 1] adolescent medicine. We met with [Doctor 2], an endocrinologist. Met with [Doctor 3], psychologist. And I felt really nervous and hopeful. (6) • And I'm not saying there won't be nasty people there but there aren't going to be nasty people that have learned to specifically target me, you know? There would just be nasty people. And I'm fine with that. That's a lot better than nasty people that want to ... or that will single you out, right? So, I guess I'm hoping ... or I feel hopeful that I will go out there and I will create a new life or atmosphere for myself. (30)

Health-related quality of life – psychological distress codes with example quotes	
1. Anxious	<ul style="list-style-type: none"> • Before I was on hormones, I was super anxious. I couldn't do anything at all without having a panic attack. (8) • I think that, well, my ... my transition has helped significantly in making me less anxious, less easily agitated. (35) • So, I still struggle with anxiety and depression and my PTSD. (45)
2. Depressed	<ul style="list-style-type: none"> • And I had never had the freedom of expression like that before so, like, I was really depressed all the time and I was not really sure what, again, like, who I was or what I liked. (15) • I was depressed and I felt, like, really ... like, very ... yeah, like, very different. (25) • I guess I was dealing with depression and, also, just, yeah, how my ... my appearance and stuff just made me feel down, as well. (27)
3. Angry	<ul style="list-style-type: none"> • ... when my mom [told] my older brother and my stepbrothers, they laughed at me, so I was, like, mad and sad... (1) • Remembering, like, the anger I felt, like, because I was dysphoric which is why I included it in here was because my dysphoria, I didn't really know how to deal with it so it kind of presented as a lot of anger at, like, outwardly. (14) • I think that my deep-down anger will always be that I'm trans. (22)
4. Dysphoric about gender	<ul style="list-style-type: none"> • Oh, I was crying almost every day. I was very sad and dysphoric. (43) • Just like, body images and those are really effective on my mood. And then, just, like, you know, experiencing dysphoria is, like, a really exhausting experience. So, once I'm already exhausted from, like, dysphoria, it's pretty easy for my mental health to, like, spiral down. And then usually when I'm already down, my dysphoria is at its worst. (2) • I had a lot of ... like, I had a lot of dysphoria, I had a lot of discomfort with, you know, with my body, with my role in ... in society, you know, with how I was presenting myself. (18)
5. Sad	<ul style="list-style-type: none"> • But you'll never be born as a man no matter how many surgeries you have and how long you've been on hormones, that doesn't change. And of course you do get sad about that. (7) • And I'm ... I'm also remember being sad that it was too late for me to go on hormone blockers 'cause I started puberty earlier than most people my age. (16) • I felt a lot happier but also, I would get more mood swings, and I would feel sad sometimes for some reason and I didn't know why. (47)
6. Worried	<ul style="list-style-type: none"> • And I was worried that if I told them, that they wouldn't love me anymore or something like that. (47) • ... I just felt a lot happier and a lot less worried about, like, everything. (22) • I would get more anxious and stuff about people looking at me and judging me and I was worried that I wasn't passing. (40)
7. Self-conscious	<ul style="list-style-type: none"> • So, my hips, especially. They're, like, a little bit wider than my shoulders so, I'm always, like, self-conscious 'cause it makes, like, a more feminine figure. (20) • When I wore my binder there were, like, certain things that ... it's not that they, like, directly impacted the activity ... like, it impacted the activity but not having a flat chest just made me too self-conscious to be able to participate. (32) • Not good. I just felt really self-conscious about changing in front of other guys. (10)
8. Frustrated	<ul style="list-style-type: none"> • ... no matter what I ... do, I always look like a girl and it's so frustrating. (4) • Feeling dysphoric and frustrated every day. (6)

	<ul style="list-style-type: none"> And, at the time, I thought it was just 'cause I was bugged by them, but I think, now, I realized it's ... it was gender envy and, like, being frustrated that I couldn't present that way or that I didn't know how to; kind of jealous of their ability to do so. (36)
9. Confused	<ul style="list-style-type: none"> I felt really confused about ... well, that ... that it wasn't really me anymore. So, I felt that I needed to try to dress differently (25) I want to rip my chest off. And then other days it was like, oh this is fine. I don't mind this. Which really confused me. (43) I spoke to a lot of my friends, just being like ... I don't feel that this is who I am. I am really confused. I don't really know what to do about it. (44)
10. Lonely	<ul style="list-style-type: none"> I felt really isolated and alone. (47) And it was just, like, a really confusing and lonely time because no one can see what's going on inside your head, obviously ... and that was just, like, a really lonely couple months. (2) ... I won't say like a scary experience but just kind of a lonely experience kind of knowing that I don't have anyone to really rely on (31)
Health-related quality of life – body image codes with example quotes	
1. Uncomfortable with body	<ul style="list-style-type: none"> It was very obvious that I was not comfortable in my current body. (3) It's [body shape] just a little bit like more hourglass, more curvy, and I ... I was very uncomfortable with that especially in the beginning. (20) I started to really notice the differences and started feeling, like, uncomfortable in my body realizing that I am not actually the boy that I've been, like, thinking I was born as. (24)
2. Uncomfortable with how I look	<ul style="list-style-type: none"> Just, like, the way that my body is shaped, like, the curves or anything like that just made me kind of uncomfortable so I would wear stuff that, like, hides my figure. (2) I've gotten the surgery [top surgery] and I just feel a lot more comfortable in my body and a lot less dysphoric which feels really good. (47) And it wasn't, like, that I wanted to be skinny, it was that I was uncomfortable with these parts of myself [chest/hips] and I didn't know what to do about it. (20)
3. Dislike how I look	<ul style="list-style-type: none"> I don't like how I look. (5) Incredibly dysphoric and hating my body and depression getting far worse. (6) I just ... just disliked my ... my body and how I looked and stuff. (27)
4. Insecure	<ul style="list-style-type: none"> Sometimes I feel insecure about my jawline. (14) It made me feel very insecure and self-conscious and I remember being, like, absolutely terrified that somebody was going to see the strap or something and notice I was wearing one 'cause I just didn't like the idea that it was there. (30) I get very insecure about my chest. (40)
5. Dislike how I look when dressed	<ul style="list-style-type: none"> I didn't like how clothing looked on me. Tighter clothing, mainly, 'cause you could see weird curves. (30) And then after when I tried those clothes on, I just liked it. (1) It didn't feel good because I felt like a lot of girl's clothes were uncomfortable for me. (16)
6. Avoid looking in mirror	<ul style="list-style-type: none"> I don't have any mirrors down here, but I also don't like looking at myself in the mirror. (5) If I am dysphoric, I tend to just avoid the mirror all together. (43) But of course, got to a point where I was comfortable enough in myself that I could look in the mirror (44)

7. Unhappy about how I look	<ul style="list-style-type: none"> You know, and I think that part of it was also like, a large hoodie fanatic, large hoodie, like, every day even when it was, like, very warm out because I was not happy with ... with what my body was doing. (18) It's definitely improved a lot. I have a lot less dysphoria and I feel a lot more confident and happy with my body. (12) But after the top surgery, even though I'm still, like, I don't have a rocking six pack or anything, I feel like I look so much better and I'm just so much happier all the time. (33)
8. Cover up/hide how look when go out	<ul style="list-style-type: none"> Never left the house at all ... like I went to go take out the trash, I would either be binding or wear an extremely big hoodie. (9) I started, kind of subconsciously, trying to hide what I looked like, and wearing a bunch of sweaters. (17) And I still do this, just because I like jackets, but I would always wear a jacket, because when you look to the side, you can see the shape, like, the shape of your chest better. And the jacket kind of hides that. (3)
9. Hard to meet new people	<ul style="list-style-type: none"> I ended up trying to make friends with two boys my age and, I don't know, it just wasn't the way that I wanted it to be. It wasn't the sort of friendship where you hang out outside of school and actually go and do stuff. And I think they also thought I was just, like, you know, you're obviously, not one of us, either. (21) So, it was, like, really hard adjusting or making, like, actual friends. (28) [Interviewer]: How difficult was it to make new friends after coming out? [Participant]: It was pretty difficult. I felt that I had to change who I was to get friends. (47)
10. Dislike taking photos	<ul style="list-style-type: none"> [Interviewer]: What about looking at pictures of yourself? [Participant]: I don't like that either. (5) But now I feel a lot more confident taking pictures. (3) I felt uncomfortable having my picture taken, like, anyway. So, it was kind of, like, it wasn't really a change. (23)

Experience of care – healthcare team codes with example quotes

1. Explained treatment options	<ul style="list-style-type: none"> They were really thorough with descriptions and explaining treatments which helped me make an informed decision on do I want birth control or an IUD? (43) So maybe if they talked to me more about the kinds of options that were out there, I would have chosen differently. (12) I really liked the way that, like ... so the way that they presented everything to me, like, they gave me all the opportunities and that was great. (25)
2. Used pronouns	<ul style="list-style-type: none"> She kind of forgets my pronouns and stuff sometimes [family doctor]. (3) And then I switched to my current therapist who also uses they/them pronouns, which is really nice. (14) The staff are all very nice. They do a good job of, like, always checking, like, what pronouns you use and, like, if you want to use a different name. All the people are nice. (36)
3. Supportive	<ul style="list-style-type: none"> But besides that, I loved all my care with [Gender Clinic]. They are all very kind. And they are all very supportive. (7) The doctor's office let me change for, like, my preferred name and stuff to before I got it, like, legally changed and stuff. So, like, yeah, he was really nice and supportive about everything. (29) [Doctor X] is supportive of it. She's the one who is talking me through a lot of this. (36)
4. Knew what they were doing	<ul style="list-style-type: none"> She didn't feel comfortable, like, prescribing Lupron, prescribing testosterone, so she sent me to another doctor for Lupron. (2) ... my doctor for, like, when I told her I was trans, she wasn't, like, you know, like ... yeah, she just didn't know what to do, really. (22) ... really, really liked that [Doctor X] was knowledgeable about that (15)

5. Friendly	<ul style="list-style-type: none"> • I found everyone very friendly. [Doctor X] was very friendly. (40) • My top surgeon was really nice, and he did a really good job. (21) • In general, just very nice person, very nice doctor. (30)
6. Answered questions	<ul style="list-style-type: none"> • Like, if you ask questions about it, of course they do answer. But you don't really get a full run-down. I mean they tell you the risks and the changes and stuff. But that's about it. (7) • And explains everything to me and answers all my questions thoroughly. (14) • She was helpful. I did have some questions, like, before ... like, right before getting surgery and she answered all of them so it was good. (32)
7. Comfortable	<ul style="list-style-type: none"> • So, yeah, I think I ... yeah, I was very comfortable with everyone and asking questions and they were all really helpful. (19) • [Interviewer]: Did you feel, like, comfortable talking with her [family doctor] about this and, like, things related to your gender identity? [Participant]: Yeah. Yeah, I felt comfortable talking about it with her. (27) • She [psychiatrist] was really, I don't know, nice to talk to. Like, she made me feel really comfortable talking about everything and, I don't know, explaining everything before she, like, just started, I don't know, asking me questions about, like, why I wanted to transition and, like, why I wanted surgery and stuff like that. (29)
8. Listened	<ul style="list-style-type: none"> • They are all great listeners. (7) • Like, even if they were a cis person, if, you know, they just listened to trans people about their experiences and were, like, "Oh, yeah. I know other trans people feel the same way. You're not alone with that." Anyways, yeah, having that person with me has made me feel more open to talking about that. (15) • She was really calm, really laid back. She, like I said, she was a great listener, which I really appreciated 'cause I spent ... I spent a lot of our sessions describing random stuff that didn't have anything to do with my mental health or me, in general, and she would sit there and listen to all of it and always acted like it was the most amazing story she ever heard no matter how poorly I describe it to her. (35)
9. Respectful	<ul style="list-style-type: none"> • They're all very, like, respectful and, like, letting ... making sure that if I have questions, now is the time to ask them and stuff like that. (23) • I don't like him at all. I feel like he's very rude and dismissive and misogynistic because he's done the same types of things to my mother, as well [family doctor]. (30) • ... the staff wasn't really educated in trans issues, but I was still gendered correctly based ... like, I was never misgendered. The other, like, patients were really good. That was ... that was a much, much more positive experience. They didn't know, basically, anything about gender dysphoria but they still respected me. (32)
10. Talked to me (not just my parent)	<ul style="list-style-type: none"> • They actually mostly talk to me. A lot of times they talk to me, and I have to look at my aunt for the answer. And then they will start getting the answer from my aunt. Then they go back to talking to me. And that's something I kind of struggle with, with some other doctors. Not the ones I have now. But that I've had in the past. Not at the gender clinic, just general doctors. They always talked to my aunt. And I'm like, I'm the one with the issue. And I do really like that they talk to you. (7) • Often, when my mom's there, it's more just that she can know what's going on and occasionally offer input but it's still major ... like, majority of the time, me doing most of the talking. (30) • ... like, sometimes when my parents ... like, [doctor talks] to me or to me and my parents, not just to, like, my parents. (32)

Experience of care – information about hormone treatment codes with example quotes	
1. Change hair on face, head or body	<ul style="list-style-type: none"> • [Interviewer]: So, thinking about testosterone, before you started, what were you expecting from it? [Participant]: I was pretty educated on all of it, all of, like, the side effects and the changes that it makes. So, I was mostly expecting, like, the voice change. Facial hair. Bottom growth. Some personality, or, like, some personality changes, like, competitiveness. Aggression. Possibly, like, you know male pattern balding, depending on the genetics. That was kind of it. Just hair, everywhere. (2) • Yeah. Because I know HRT thins out hairs a lot. And slows down the growth. (11) • Umm, I've heard a lot of people talk about their experiences and, like, some of them have said, like, really weird things. Like, they're like...like, really specific things. I heard someone say that they got taller with T. I heard someone say they didn't. I heard someone say they didn't get taller with T but their feet grew. I heard another person say it, like, the way, like, you start balding soon. I was, like, ugh. Or like, that you start growing more body hair, but you start balding. I was like, hmm, well like, earlier, you know? (25)
2. Change body	<ul style="list-style-type: none"> • I would love to know more about the variety of ways that testosterone can change things, like ... like, especially statistics about those things and ... like ... including things like the probability of testosterone affecting one's height ... or the probability of male pattern baldness in people who are on testosterone (13) • I knew that body fat redistribution was, like, a thing that happens and is something that I talked about in ... in, like, therapy where I was, like, "I don't like my hips," and so I was able to kind of like, hope for that change. Like, it's a very ... it takes years for that to, like, happen to where you feel confident, but I really wanted that. (22) • ... what I've been told, it does have a bit of an effect of changing and distributing your body portions and stuff like that to more masculine so I'm just hoping that happens. (26)
3. Change how you feel	<ul style="list-style-type: none"> • I feel like something that people don't talk about that often is your emotions change. I feel like now I don't cry anymore. And when I get angry, it's harder to control my anger, I guess. (8) • ,, when I first started them, I got handed this, like, pile of papers with, like, a huge list of all the changes. And one of them would be, like ... I think it was, like, mood swings and stuff like that. And I was definitely ... like, I don't know if it was related to the hormone blockers or just, like, my mental health at the time but I was definitely, like, a lot ... like, a bit more, like, angsty [anxious], a bit more, like, 'I don't wanna, like, do anything right now' kind of feelings. (23) • Like, testosterone generally creates, like, a more irritable person, in general, or like, a more angry person, in general. So that, I'm not quite looking forward to 'cause I'm already a bit irritable most of the time (34)
4. Change voice	<ul style="list-style-type: none"> • [Participant]: Well, I know that hormone therapy doesn't change your voice. At least not for trans fems on estrogen. [Interviewer]: OK. And that's why you are interested in starting voice therapy? [Participant]: Yes. (11) • I don't think I expected my voice to drop down as much as it did. Especially as fast as it did. Like, it's still dropping. (15) • I knew that my voice wouldn't change a whole lot and it didn't, as far as I'm aware, so yeah. I think it ... my voice may have stopped getting deeper 'cause I think it was ... I mean, it definitely was getting deeper as I went through testosterone puberty. But that stopped, obviously (36)
5. Change physical strength	<ul style="list-style-type: none"> • I've gained a lot of muscle. I recently joined ... this year, I have a weightlifting class in my ... for PE [physical education] and so I've ... I've gained a lot of ... a lot more muscle than I thought I would, in that class, because testosterone makes you build muscle faster. So, I've gained more muscle in the last year than I have a lot of my life which I ... I really enjoy. (35) • [expectations from taking testosterone] Like being stronger. (41)

	<ul style="list-style-type: none"> • I probably have gotten physically stronger... (12)
6. Ability to have child in future	<ul style="list-style-type: none"> • [Interviewer]: do you feel like you were given all of the information that you needed or that you wanted to have before making decisions about your care? [Participant]: I think so. I definitely think that maybe there was a little bit more that they could cover. One of the things is going on hormones can impact your fertility. Whether or not I have kids in the future, I don't really know yet. But maybe I wished they kind of talked to me a little bit more about the kinds of options that you have to go through if you want to receive certain care. (12) • And I ... I tried to, you know, argue with her about it because, I mean, I ... I had been doing research on hormones and stuff for years at that point and so, I knew that wasn't a completely true statement. It's like, more of a case-by-case basis type of thing and it's not a guarantee to lose, like, fertility and I just didn't want kids anyway. (16) • [Interviewer]: And did your doctors or, like, your healthcare providers talk to you about anything related to, like, fertility and, like, impacts of hormone therapy on fertility? [Participant]: I think they mentioned it. I don't know how much I remember from it 'cause I, like, wasn't too worried [about fertility]. (23)
7. Change genitals	<ul style="list-style-type: none"> • Like, there's no educational pictures of, like, what that looks like or how that's supposed to feel, how it's supposed to look. Like, I was definitely a bit worried about that. Like, is what I'm feeling there normal? Is it [clitoris] supposed to grow a certain size? Is it supposed to be this or that? Yeah, that was probably the biggest barrier for me in terms of, like, learning what ... or how my body was supposed to change. Yeah. (15) • Honestly, I just sort of ... most things that happen are a plus even if I'm not, like, outright excited about them. And there isn't a whole lot I'm worried about except for, maybe, like, I know there is bottom growth when you start testosterone and I know that some people experience, like, pain with that. So, it will be interesting to see, I guess, what happens. (24) • [Interviewer]: So, thinking about testosterone, before you started, what were you expecting from it? [Participant]: I was pretty educated on all of it, all of, like, the side effects and the changes that it makes. So, I was mostly expecting, like, the voice change. Facial hair. Bottom growth... (2)
8. Change mood	<ul style="list-style-type: none"> • I know there's, like, big changes in mood just from the hormone, like, changing. Which is more so something that my mom was, like, concerned about. I believe that there ... like ... like, I have a therapist that I talk to so I hope I will be able to continue seeing a therapist when I am on testosterone to manage that. But in terms of other risks, I kind of will see as it goes because it's not as common so I don't want to, like, get myself worried that it's gonna happen to me. (24) • Estrogen is really slow, especially because I took the pills. But I remember I just felt a lot more emotional at first. The first changes were definitely emotional. I felt a lot happier but also I would get more mood swings and I would feel sad sometimes for some reason and I didn't know why. (47) • ... the main that I noticed a lot that I first started noticing in terms of like, emotion were, like, you know, the first, like, month or two which is just, like, a bunch of mood swings and stuff which is, like, stuff that I expected from, you know, you're changing your hormone setup (18)
9. Some changes permanent	<ul style="list-style-type: none"> • My doctor talked me through it, went through all the risks associated with it [blockers]. He was always very good at communicating, like, this is reversible, like, we can stop at any point, really, and told me everything that will happen on hormone blockers (22) • I think these two questions are perfect and it's really good that they're placed right next to each other because people think that changes are just, generally, very easily reversible but they're not and they can cause permanent damage to, like, whatever it is that you want to protect or, like, if you want to go back, you can't for certain things. So, I think these two are very important questions to ask and it's very good that they're right next to each other. (Cog 4)

	<ul style="list-style-type: none"> • [Interviewer]: What were your expectations before you started it? [Participant]: They gave you this funny sheet actually about all the ... it's like a 2-column thing. It's like, permanent changes, non-permanent changes. And it's just ... there is a lot of stuff. And it's a little overwhelming at first, but none of it I was upset about. (7) •
10. Affect bones	<ul style="list-style-type: none"> • I'm glad it [scale] includes some of those things that people don't always think about before starting hormones, especially the one about, like, how strong your bones are, like, those permanent, how is this going to affect your body in the long term... (Cog 10) • But she also brought up, like, a bunch of weird medical graphs about bone marrow and stuff like that and how, usually, like, when you start taking testosterone, it goes down and then it goes back up. But because they're still doing research on it, like, they don't really know, like, exactly why or whatever. But, for me, when they did the scan, it didn't go back up. Like, it's still...it's steady but it's still, like, not, I guess, as dense as they want it to be. So, I don't know. I don't know how that's gonna play out but we'll see. Maybe I'll just have fragile bones for the rest of my life. (23) • I guess after, cause a lot of people, if not everyone, after they go on hormone blockers, your bone density just completely crumbles and you have to really take supplements and stuff for them, um, and then once you get on testosterone, I guess, uh, it comes back slowly. So, I guess it, people really need to be aware of what could happen, um, and just be careful with vitamins and supplements. I guess that needs to be mentioned more, um, in healthcare. (Cog 8)
Experience of care – treatment outcome codes with example quotes	
1. Met expectations	<ul style="list-style-type: none"> • Yeah, my voice has definitely gotten a lot deeper. My voice has gotten deeper and pretty much everything that I expected has happened. (19) • Yeah. I saw the changes that I was hoping to see. Like ... like the change in fat distribution, the thinning of, like, body and facial hair and stuff like that. (27) • The one thing that I kind of hoped for that hasn't really happened is, like, redistribution of fat from around the stomach to around the thighs. Like, that hasn't happened for me. (36)
2. Happy with treatment	<ul style="list-style-type: none"> • And, overall, my current testosterone intake is adult, like I said, and I'm happy so ... yeah, I'm happy where I am, medically just, like, doing my daily cream [probably meant gel]. (22) • And I was really disappointed for those first few months. Actually, up until about 6 months. I was really disappointed because I wasn't really seeing any changes. But once my dose got increased, slowly there were more changes. And within this last month, there have been more changes in the last month than there has been in the 6 months before that, because my dose is higher now. (42) • I really am happy with the treatment that I'm getting [hormones]. (Cog 1)
3. Helpful	<ul style="list-style-type: none"> • ... as much as surgery helps and hormones help, it's never perfect. It's always in the back of your mind. I'll just be sitting in my classroom and I'll think about the fact that I'm not like the other guys in this classroom, because I'm trans. I prefer to feel that I fit in, but of course that can't really happen. It's a little hard to explain, but I think that's the best that I can do. (15) • But I'm happy with my face for the most part. I don't think I have a feminine face or anything. Taking hormones and having facial hair has definitely helped that. (12) • [Interviewer]: So, you went on birth control for a bit to help, like, manage the periods? [Participant]: Mm Hmm. Yeah, for a couple of years 'cause it was just ... I could ... it was just unbearable. I: And did birth control help with that or ... ? P: Yeah. The ... I mean, I, basically, had no periods for years so it helped wonderfully. (35)

4. Made a difference	<ul style="list-style-type: none"> • The result, there were times where I was really frustrated where I was, like, this doesn't feel like it's working. But I ... I did take, like, videos, like, of my voice and if I were to look back now I ... there's a very big difference. I ... I think I had, like, just a naturally very high voice and I ... I tend to have, like, a high voice even now. Like, I just prefer to talk like that. But still, like, it was very high. So, looking back, I feel very happy with where my journey has gone with testosterone. (22) • I mean, my ... like, definitely around, like, 2021, I had a lot more of a baby face and then it changed. Like, I have a much squarer jaw. But I, like, again, I'm not sure if that's because of the testosterone or puberty or both. Like, it's just a lot of subtle changes, I guess. (23) • [Interviewer]: OK. So, going on Lupron didn't change anything? [Participant]: No. Everything pretty well stayed the same. (44)
5. Improved life	<ul style="list-style-type: none"> • [Interviewer]: are there anything that stands out to you as being most important, a kind of key moment in your journey? [Participant]: I think starting hormones, I think that's when I started really feeling affirmed in my gender. It definitely had a very positive impact on my life. I think that's something that really stood out for me. (12) • So, you know, being on testosterone was, you know, really, really wonderful for that and that was another, like, that was, I think, probably the biggest impact that testosterone had on my life was, like, you know, it's like ... it's all ... you know, it's a matter of, like, okay, like, I like my voice now, yay, that's awesome ... (18) • ... although it hasn't been perfect, gender affirming care has given me the ability to live well. Again, without it, I don't know where I would be. (32)
6. Life better	<ul style="list-style-type: none"> • And I think that really, the voice and the facial hair and the kind of outward appearance that makes me feel like who I am inside has really impacted my life a lot in a really positive way. (12) • ... stopping the period and just stopping any further progression of, like, puberty. That was, basically, it. 'Cause I guess that's ... that's really all an endocrine blocker does. But I was really happy with that. I think that just made me feel better, in general, that there wasn't this, like, overwhelming dread of changes happening that you can't stop because that's sort of how puberty felt. Which, I guess, that can go for any person but, as a trans person, it's a terrible feeling and just being able to...to stop that was really good (32) • Medically transitioning, I want to say, hasn't really changed much but it has...it's changed a lot for the positive. (35)
7. No regrets	<ul style="list-style-type: none"> • But personally, I know, like, I've definitely not have any regrets about any sort of treatment and I think it's important to clarify that. Especially since a lot of...a lot of other people might try to speak on trans people's behalfs (sic) and say, like, "Oh, look at this percentage of detransitioners (sic) or this percentage of people that don't like what they're going through," but it's important to specify that, no, I don't regret anything. (Cog 1) • In the beginning I was sort of hesitant, like what if I am going to regret this later? I don't regret it [hormone therapy]. I definitely don't. (9) • But now that it has happened [changes from estrogen], if you tried to make ... if you offered me a thousand dollars to go back to pre-body for a day, I would tell you to jump off a cliff. (17)
8. Worthwhile	<ul style="list-style-type: none"> • 'Cause making sure that, after all of, like, the ... like, months of waiting and processing psychoanalysis and, like, possibly therapy, going through hormone replacements and, like, getting a shot every three months, it's important to make sure the, you know, the person who's going through all that is ... believes that it was worth it. (Cog 4) • I think the only thing is that I have to inject myself every week. It kind of sucks a little bit. I'm not afraid of needles at all. They really don't bother me. But it's just kind of a hassle. In the future there are probably other options that I can do. But at the moment they are not covered by my insurance, so that's the route I have to go. It's not really that bothersome, but

	<p>definitely sometimes it's annoying. The acne sucks. But I'm just trying to manage it as best as I can. I definitely think that the positives outweigh the negatives. So, it's worth it to have acne just to be who I am. (12)</p> <ul style="list-style-type: none"> • [Interviewer]: So even though you are terrified of needles, it's worth it, because you are receiving the care you want. [Participant]: Yeah. Mentally I will stress out about it either in there or the day before. Before I would get myself super worked up and try to escape and stuff, but I'm calming down and just accepting that this is a thing I need to do. And if I'm really serious about this like I say I am, then it's something I'm going to go through with. (40)
9. Lifesaving	<ul style="list-style-type: none"> • So, the main issue that I struggled with, gender dysphoria, it's hard to say that it's alleviated now but 'cause it's definitely not ... but for me, gender affirming care was lifesaving. (32) • I think this gender care is really important and that, you know, it does save lives (36)
Voice – sound codes with example quotes	
1. High or low (pitch)	<ul style="list-style-type: none"> • I just noticed my voice was getting deeper. (2) • So, my voice was always very high pitched. (3) • I think the biggest thing was I wanted my voice to get lower, because it was pretty high pitched and squeaky beforehand. (8)
2. Matches your gender	<ul style="list-style-type: none"> • And I feel really affirmed every time that I hear my voice so, it's been really positive, overall. (15) • Or, you know, or even on the flipside of, like, I didn't want someone to hear my voice, assume that I was a girl, and then for someone to call me 'he' and then for that person to be, like, "What! You know, that doesn't make any sense." Whereas now, that's not something that I think about. (18) • ... ,my voice really does impact me, like, day to day because, I don't know, I think that I became really quiet this year because of that whole voice thing. 'Cause I felt like, I don't know, I feel like my voice doesn't match who I am. Yes, my body matches who I am but not my voice. (25)
3. Talk on phone	<ul style="list-style-type: none"> • So sometimes I would not talk, unless I had to, because I didn't want people to perceive me, like, I didn't want people to hear my voice and then perceive me differently, especially, like, on the phone. So, I avoided phone calls for a very long time, just because if I picked up the phone and someone didn't know who I was, they would say "hello ma'am" and that was horrible. So, it was a really bad feeling. (2) • [Interviewer]: And if you had to talk on the phone, is that something that you would be OK doing? [Participant]: I'm OK doing it, but I just ... it's not my favorite thing in the world. (10) • I didn't really like, call many people before T [testosterone] and I still only, like, you know, call a few people but just also, in terms of, like, being more comfortable with people hearing my voice. I think that's a ... like, I don't have to text conversations, we can just call each other or just talk in person but I think that that is a part of it, too. (18)
4. Clear	<ul style="list-style-type: none"> • I have voice cracks sometimes. That is it. I feel like it's a little bit scratchier. That's something I've noticed. (4) • Yeah, it cracks like crazy and it's hilarious. (41) • And I noticed when it was starting, my voice was going up and it was going down and it was really shaky and really weird and I would crack a bit. (43)
5. Speak on front of people	<ul style="list-style-type: none"> • [Interviewer]: Are you comfortable with your voice when, like, taking in front of your class? [Participant]: Not in front of my class. (26) • In school, like in class, answering questions or even just if there's classmates talking about a conver ... like, about a topic that I really like, I'll want to jump in really badly, but I can't bring myself to just, like, talk to people because I don't necessarily want people to hear my voice. (24)

	<ul style="list-style-type: none"> • [Interviewer]: And did you ever experience any voice cracking when you were on testosterone? [Participant]: Yes. I still do all the time. I'm surprised it hasn't happened. But there was at the beginning of this school year, it happened a lot especially. It was really embarrassing. It would happen every sentence. It was very embarrassing. g. (7)
6. How old you sound	<ul style="list-style-type: none"> • I described it a little bit as sounding like a 7-year-old boy. (3) • And with my voice, like, even though it's not really high, it just makes me feel like I'm a kid, in a way. And I'm always, like, nervous to talk to people 'cause, with my appearance, I feel people are expecting a much lower voice than what actually comes out when I talk. (23) • ... when I was younger, I ... like, before I was on testosterone, for example, like, my voice was a lot higher, so I sounded a bit more prepubescent than I actually was. (Cog 1)
7. Excited	<ul style="list-style-type: none"> • But it was ... it was ... I would notice I would go higher as I would get excited. Even now, my voice gets higher when I get excited. So that was a little annoying. (33) • When I get excited about something and my voice gets higher, and I used to get really frustrated with that. (41) • I know, when I'm excited, my voice can get a little more, like, depending on the context, can either get like, way more feminine or way more masculine. And so that's like, it definitely affects my gender expression. (Cog 5)
8. Speak naturally	<ul style="list-style-type: none"> • I find different registers and different pitches sometimes and, you know, that's something that I'm...that's way more natural to me now where, like, usually, I ... I talk like this but there's also, definitely, times where I, like, you know, I talk more up here [Speaks in a slightly higher voice] and that's what's natural for me. That, I think, has taken me being consistently on testosterone for a while to get used to whereas, like, that's kind of the natural way that you speak, the natural way that your voice changes, you know, regardless. (18) • You can, like, speak from your chest or you can just talk ... I can't switch back now ... it's ... it's not like a weird thing, anyone can do it, it just makes your voice slightly deeper and have a different, like, tone. I don't know, like, the intricacies of it but I have to actively do that. (32) • [Participant]: Sometimes ... sometimes but it's when my voice, like, defaults back to what it usually is, like, the comfortable range. [Interviewer]: Okay. And does that happen often? [Participant]: Not very often but, like, every once in a while. (34)
9. Laugh	<ul style="list-style-type: none"> • ... my laugh has changed a lot, which is not something that I really noticed until, like, until, like, a few months ago and my friends started telling me that I had like an evil laugh 'cause I realized that, like, my, like, my post-T [testosterone] or my ... my on-T, like, natural, deep laugh is like ... it sounds like a ... like a villain laugh when I laugh. That's something that I really like.(18) • ... when I'm laughing I'm not really trying to, like, control my voice so it's important to, I guess, for me to be aware of how I sound when I laugh. (Cog 1) • I have felt very differently about that [my laugh] at different points. And I kind of before I know I was, I knew, I was trans to like, kind of early transition to like, where I am now. That's changed a lot. (Cog 5)
10. Talk quickly	<ul style="list-style-type: none"> • ... that's more of an issue when you like, for people who have like, are like trying to change their voice. And then like when you talk quickly, it can be hard to like, maintain that. And then like, if you talk quickly, like kind of breaks down, like moves to the thing that's like physically easier (Cog 5)
Voice – distress codes with example quotes	
1. Avoid talking at school	<ul style="list-style-type: none"> • [Interviewer]: So, if you had to answer a question in class, you would feel OK doing that? [Participant]: Oh yeah. I talk a lot in class. I'm completely fine with that. (7)

	<ul style="list-style-type: none"> • I would not speak as much, in general, especially in, like, class settings. I would, like, barely speak at all, a lot of the time, because I was very uncomfortable with my voice. (18) • So, it impact me, like, day ... day to day and, yes, like, I often feel like I kind of, like, didn't speak a lot in class for that reason, but I still don't, because I feel like, I don't know, I feel like it's a girl speaking. It's not me. (25)
2. Dislike voice	<ul style="list-style-type: none"> • I hate hearing myself and don't like talking and stuff. (5) • I like my voice. I don't have any issues with it. (18) • So, it was very nice to have a deeper voice, especially when people started noticing that there was a difference in my voice. I was like, "Yes! It's working!" (33)
3. Avoid talking on phone	<ul style="list-style-type: none"> • So, sometimes I would not talk, unless I had to, because I didn't want people to perceive me, like, I didn't want people to hear my voice and then perceive me differently, especially, like, on the phone. So, I avoided phone calls for a very long time, just because if I picked up the phone and someone didn't know who I was, they would say "hello ma'am" and that was horrible. So, it was a really bad feeling. (2) • But I avoided, like, talking on the phone. (15) • Yeah, that's something I don't like doing either. Most times I will let it go to voicemail to see if I need to call them back. Or if I know that I have, like, a doctor is going to call me on a day, I'll answer it but I don't like speaking on the phone. (24)
4. Self-conscious	<ul style="list-style-type: none"> • Like, even when I had a higher voice, I wasn't really self-conscious about it because I didn't realize but now it's, like ... I'm not sure. I don't think about how I sound when I'm talking so... (2) • And that did bother me, I think, because I felt kind of, like, self-conscious about that all the time, especially in gym class. I had to drop out of gym class into online gym, like health class... (3) • I was always conscious about how I was sounding, what I was saying. (15)
5. Speak less	<ul style="list-style-type: none"> • So, sometimes I would not talk, unless I had to, because I didn't want people to perceive me, like, I didn't want people to hear my voice and then perceive me differently, especially, like, on the phone. (2) • I wouldn't really not talk, because of my voice. (3) • Yeah, it does. Because I would never talk in class before. I would never talk to anyone before. 'Cause ... 'cause, my voice was ... was the giveaway, like, that was it. (21)
6. Avoid speaking in front of others	<ul style="list-style-type: none"> • Same thing, definitely. I just feel a lot more ... a lot more comfortable doing that stuff [speaking in public] and ... and, you know, living ... living my life. Yeah. (18) • I ... I would always have my parents order for me 'cause I couldn't talk. Now I do that myself 'cause I've no issue with it anymore. (21) • I don't necessarily want people to hear my voice or even ordering at stores makes me feel nervous. I'm not generally, like, an anxious person about, like, how people are perceiving me in terms of talking to store workers but I'm just uncomfortable with my voice. (24)
7. Wish voice sounded different	<ul style="list-style-type: none"> • I want my voice to be deeper. (2) • I just wanted my voice to be different, but it hasn't yet. It's been 6 months, and I'm really frustrated about it. (4) • It's too low and masculine and all that. I would like it to be more neutral. (5)
8. Avoid going out	<ul style="list-style-type: none"> • With my close friends, I talk all the time and I don't feel like they are judging me with my voice. (3) • [Interviewer]: And what about outside of school? Talking when you go out. Is that something that bothers you as well? [Participant]: Kind of. (4)

	<ul style="list-style-type: none"> • ... with my voice and, like, my body, I was starting to feel like I could go into stores, and I could go on walks, and I could, like, be a person in society and not have to stay in my room all the time. (22)
9. Unsafe in public	<ul style="list-style-type: none"> • I was never super scared of using the men's restroom but I'm definitely, like...like, I don't have any issue with it now. Whereas, before, when I had my voice, I would make sure I didn't, like, talk in the men's restroom, you know, because ... and I ... and I never had ... I ... I guess, kind of surprisingly, I never had any issues using the men's restroom. But there was that fear that I don't have anymore. (21) • ... with my voice and, like, my body, I was starting to feel like I could go into stores, and I could go on walks, and I could, like, be a person in society and not have to stay in my room all the time. (22) • I ... I feel pretty safe ordering at restaurants. Haven't really had any concerns. (27)
10. Avoid some activities	<ul style="list-style-type: none"> • I definitely don't sing as much as I used to. Like, with my friends, that's something that I used to enjoy a lot. But I, like, I'm a very high-pitched singer and I use, like, a lot of treble in my voice so I just ... I don't sing as often as I used to. Only in the comfort of my own home, sort of thing. (33) • But I hated my singing voice, because I wanted a really low, brassy baritone. But I was a soprano. So, I just stopped going. (41) • At times I avoided singing. Singing was something that I really liked to do. It's something that I still like to do. Definitely need to go back to voice lessons. (15)
Gender practices – binding well-being codes with example quotes	
1. Like how look in clothes	<ul style="list-style-type: none"> • ... it's just so nice to have it, because my dress shirts fit better, and they don't wrinkle as much, and I feel like I look better. (40) • I just have to wear super loose shirts, because I have big boobs. So, I get dog ears, like the fat from the boobs goes over the sides of the binder. (41) • And like, I could, you know, wear more clothes that I wanted to wear instead of, like, big, baggy shirts and big, baggy pants. (15)
2. Feel affirmed	<ul style="list-style-type: none"> • I cried. I cried a lot. It was just kind of one of those times where the image in my head was finally somewhat what I actually looked like. (2) • I wore a binder pretty much every day, especially when I would go out in public. It helped me pass and feel more comfortable with my gender. (12) • [Interviewer]: Okay. And what about if you, like...like, are looking at yourself in a mirror while you have your binder on, like, does it change the way that you, like, kind of see yourself? [Participant]: It does. It ... it makes me feel more like myself. (34)
3. Happy	<ul style="list-style-type: none"> • ... definitely felt very happy. I felt, oh my god, it's working great. (8) • So, it...I remember I was just very happy because everything looked flat and that's what I wanted. (19) • I mean, that's kind of what the binder's for, I know, but after a while, I was like, I kind of hate that I'm stuck with this sewed up piece of fabric around my torso and that, like, I'm just kind of, no matter what it does, I'm just kind of stuck inside of it. (35)
4. Feel good about body	<ul style="list-style-type: none"> • It definitely made it ... I felt more comfortable in my body. (12) • For me, the pros was really just, like, feeling more comfortable in my body and I, like, I put ... I placed my happiness very high on the 'must have' list and so I weighed, like, comfortability in my body versus, like, possibility of achy back, bruised ribs, sore chest, stuff like that. (34)

	<ul style="list-style-type: none"> • OK, this looks way better. I was way less self-conscious, and it was just a good experience because that's how I felt my chest was supposed to look. (42)
5. Confident	<ul style="list-style-type: none"> • I feel like it makes me feel a lot more confident. That's the number one thing that people can't see my chest, so they don't know that I'm trans. Plus I feel like, it's a self confidence boost. I'll look at myself in the mirror and think, oh I look so good. (8) • I think I definitely felt more confident and more like a human being. (15) • And that, I think, has ... has given me, much more, the ability to ... to, like, you know, talk ... talk to people and ... and be confident, be more outgoing and not be, kind of like, shrinking away in that way. (18)
6. Comfortable in clothing	<ul style="list-style-type: none"> • So, I feel like wearing my binder lets me express myself with my clothing a lot more. (34) • So, they were seeing me without my binder on, which is really uncomfortable for me. (2) • I wore it for a couple of hours over the weekend and almost immediately I was able to start wearing it to school. So, it just felt so comfortable and so natural to me that it wasn't an issue at all. (44)
7. Relaxed	<ul style="list-style-type: none"> • So, even if just like, it's a matter of, like, I'm able to walk down the hallway un-slouched, you know, feeling, like, comfortable. And that, I think, has ... has given me, much more, the ability to ... to, like, you know, talk ... talk to people and ... and be confident, be more outgoing and not be, kind of like, shrinking away in that way. (18) • ... even when I had my binder on and, like, I was always worrying, like, what people thought of me or, like, even just what people saw when they looked at me. (29) • ... like, social situations or any, like, situation where it wasn't just me, I ... I always wore a binder. That was sort of what I needed. I would...not comfort...like, I would not be comfortable wearing ... not wearing one in front of very many people. (32)
8. Safe	<ul style="list-style-type: none"> • ... it was just something that I kind of started doing that made me feel, like, more safe in my body or, like, more comfortable, I guess, would be a better word. (21) • So. I don't ... I also don't wanna wear, like, bras because people, like, see my binder, just my binder, and they, like, already tease me for that. (25) • I've done a sleepover at her house before. I was comfortable sleeping in a bra but, like, right in the morning, right when I woke up, I had to change into my binder 'cause I just ... I felt weird. (34)
9. Fit in	<ul style="list-style-type: none"> • ... and that was just kind of like, a barrier of, like, you know, I could tell my cis friends, like, "Oh, yeah, I'm really tired and I'm in a lot of pain because of my binder," and they would just ... they would just kind of be, like, "Okay, like, I don't ... [understand]" You know, and then I would have to kind of explain it to them. Yeah. (18) • And binding has never been super effective for me. So, I was pretty obviously not cis. And that did bother me, I think, because I felt kind of, like, self-conscious about that all the time, especially in gym class. I had to drop out of gym class into online gym, like health class (3)
10. Enjoy life more	<ul style="list-style-type: none"> • And then, also, like, I don't know, it's hard to describe but it's just like ... even just, like, walking around and, like, talking to people, I think there's a level of, like, when you're...when you're, like, restricted in that way, physically, it makes it difficult, mentally, to feel like you're able to ... to be confident, to ... to, like, be ... be, you know, free and relaxed in that way. (18)
Gender practices – binding adverse effects codes with example quotes	
1. Pain	<ul style="list-style-type: none"> • I would always be in pain. (3) • I'm very glad I don't have to bind anymore, because by the end it was getting painful. I still sometimes get some pain in my ribs. (9)

	<ul style="list-style-type: none"> • And so, it's like, a lot of the time I would have ... I'd be having issues with ... with my binder, I'd be in a lot of pain from it, I'd be really exhausted from wearing it... (18)
2. Hard to be active	<ul style="list-style-type: none"> • Running was really, really hard. (15) • And, like ... 'cause exercising was really difficult with the constrictions. And then, if I didn't have them, I just felt horrible so... (21) • It's not comfortable to be walking long distances in a binder or to be doing any exercise. You should never exercise in a binder. I sure have. Don't do it if you can avoid it. (45)
3. Ribcage crushed	<ul style="list-style-type: none"> • It really hurt. It crushes your ribs. (4) • It's so bad. I mean it works, but you can feel your ribs just crushing. (8) • Right about at the base of the rib cage, it will feel like kind of like it's being compressed a bit too much. So, you have something pushing in on both sides. (40)
4. Hard to breathe normally	<ul style="list-style-type: none"> • Yeah, just sometimes it's hard to breathe (2) • It definitely is harder to breathe than it should be, and that's a big issue. (8) • It really, like, constricted my breathing... (32)
5. Chest hurts	<ul style="list-style-type: none"> • So, that was really hard for me and I definitely felt a lot of rib pain and a lot of chest pain. (15) • It was really uncomfortable to wear and, if I wore it for too long, my chest would start hurting a bit. (23) • And it hurt so badly. (7)
6. Back hurts	<ul style="list-style-type: none"> • It definitely hurt my back and my ribs if I did something weird or wore it for too long, it would hurt, and my back would ache after for some time. (12) • And then the more ... the more longterm effects was...was really my...my back and my shoulders and my lungs were, like, really suffering (18) • Definitely, it [binding with sports bras] ...it hurt my back because it was like a 24/7 sort of thing, and I would wear it until my back hurt so much that I had to kind of take it off during the night. (20)
7. Ribs feel bruised	<ul style="list-style-type: none"> • I always make sure that they fit properly and that I'm not overwearing them or exercising in them. So, I've never had any bruising or anything. (2) • It just feels like a ... like a big bruise inside of my chest, especially more in my sternum area. (15) • And I knew the risk and I would still check myself that my ribs aren't becoming deformed or anything and there was no bruising or pain. I think I only bruised my ribs very slightly once in the 9th grade, so I had to stop wearing it for a few days. (45)
8. Hard to breathe deeply	<ul style="list-style-type: none"> • But it wasn't ... like, breathing was very hard when exercising and I would get hot, like, really hot and not be able to breathe but, you know, I would still do it... (20) • I think it might have made my lungs smaller, because I used to be able to hold a note for so long when I'm singing. And now I have to take huge breaths all the time and I'm always out of breath when I'm wearing my binder. (41) • I did sometimes have issues with holding out notes as long as I could before, so I guess I noticed a bit of a decrease in my lung capacity. (44)
9. Skin irritated	<ul style="list-style-type: none"> • And then, the other thing would ... would be the skin irritation was the other thing of, like, wearing it, especially in the summertime when you're sweating in it, it's like my ... especially in those, like, few months before surgery, it was like, I ... I was having a lot of ... of skin irritation on my chest and on, like, my shoulders even though I was, like, you know, taking

	<p>care of my binders, I was washing them, they were clean, it's just having that fabric and having that tightness, and it's not breathable, you know. (18)</p> <ul style="list-style-type: none"> ... but I did notice that I would get a little sore sometimes and that I would get some chafing and because you spend all that time with your chest pressed up against yourself, it's kind of like when, like, really fat people, you have to make sure that you stay dry. If not, you can get, like, fungal infections because of the sweat. That happens with the chest. It ... it comes like a...it's a ripple of fat so it ... it can give you fungal stuff, it can give you rashes and so that was a ... that was another issue that I came into contact with but, thankfully, that's gone now. (33) The only time I've ever had any problem with skin irritation is with a swim binder. (44)
10. Skin itchy	<ul style="list-style-type: none"> Honestly, the itchiness was probably worse than the pain for me. But it was really ... it was like this awful combination of both because it was the open skin then it was also really itchy, and I wanted to itch it. But it healed pretty fast. (21) I just have sensory issues, so I have to wear a little sports bra, like a thin one underneath, just because the feeling of the binding panel makes my skin itchy, but that's just certain materials my body doesn't like. (43) [Interviewer]: So, you do feel some itchiness when wearing your binder? [Participant]: Yeah. But it's not because I'm binding. It's because of the fabric. Because I just don't like certain fabrics. (43)
Gender practices – tucking adverse effects codes with example quotes	
1. Pain	<ul style="list-style-type: none"> If you experience pain while tucking, I feel like that's a pretty quick trip to the hospital. You shouldn't be experiencing pain while you are doing that. (11) Sometimes I would do it weird or it would flip, and it would pinch parts. And it would be very painful, especially during class. (47) It's just like ... it's just like a kind of delayed reaction kind of thing where, like, you're walking around the whole day, you sit down to watch a show or something and then, suddenly, you're ... it's just like the ... the pain will start to kind of just appear out of nowhere and you're like, "Why the hell is that happening?" And then you ... you actually have to do, like, a mathematical calculation to figure out what is going wrong here? Like, is it your pants, is it your underwear, or stuff like that. (37)
2. Genitals uncomfortable	<ul style="list-style-type: none"> Yes, discomfort. I mean, I don't usually do it [tucking] for long periods of time. But it's obviously very tight. (11) ... it can be a little bit uncomfortable, at times, (37) Umm, well, outside of tucking, I had already had, like, physical discomfort around that area. Yeah, but tucking, I feel, just kind of made it worse. (38)
3. Genitals hurt when sit	<ul style="list-style-type: none"> And it would be very painful, especially during class. (47) So, like, for example, when you're at school or something, you can't ... you can't change the position of it or anything so you'd normally, like, I had to take off my sweater and put it on my lap and like, say, "Damn, it's hot in here." But then I'm actually just, like, very discretely trying to change my position so that it's not uncomfortable and then I'll ... and then, once it's finished, I'll just ... I'll just tie the sweater around my waist, go to the washroom, and then I'll re-tuck, kind of thing. (37) And sometimes if I tried to sit down when I would tuck I would just be in, like, a bunch of pain because it would, like, squish the part down and it would be, like, really difficult to sit. So, I'd have to, like, stand instead. Or would have to go into a bathroom and undo the tuck and then sit. So, yeah, that's...that's kind of the main problem that I faced. (38)
4. Skin has sores	<ul style="list-style-type: none"> I would get blisters sometimes it would get pinched so badly that it would turn purple. (47) Sometimes I'll ... sometimes there's even acne, right, and I don't ... I don't know why but there is ... it is actual acne, like, blackheads and whiteheads. And I've ... I've looked into it and it's not ... it's not like any sort of like, diagnosis or anything

	that would ... that it could lead to, it's just ... it's just acne because of the ... of how ... how much it's ... how long it's tucked like that, right? (37)
5. Hurts when pee	<ul style="list-style-type: none"> • And I was holding my pee for a really long time and I think I got a UTI because of that. (47) • I caught a UTI from ... you can imagine why ... it wasn't very pleasant, to be honest, and it made tucking a lot more painful so, luck ... [1:38:55.7] (Cuts off) during the summer, I just ... I just stopped tucking for a little while until it ... until it subsided. (37)
6. Genitals hurt when move around	<ul style="list-style-type: none"> • [Interviewer]: And if you're, like, walking or moving around, do you ever...like, does it ever hurt or do you ever have any, like, pain? [Participant]: Well, see that's ... sometimes. (37) • Yeah, I did actually try a couple of methods of doing that. I found that they were either too difficult or too uncomfortable because if I were to ... like, I've ... in the past, I have tucked and then, later in the day, it would get in a really uncomfortable position and it would ... and then I would, like, not be able to walk in that ... in, like, a comfortable position so I'd have to, like, limp, kind of. And so, I eventually just kind of stopped and just wore baggy clothes instead. (38)
7. Genitals hurt	<ul style="list-style-type: none"> • [Interviewer]: can you tell me a little bit more about the types of problems that it caused? [Participant]: Yeah. So, it kind of just was uncomfortable and it hurt (38)
8. Genitals numb	<ul style="list-style-type: none"> • Like everything goes numb, all over. Like, your entire body sort of thing. I ... I don't know what it is. It ... it is definitely related to that 'cause then, afterwards, like, once the feeling kind of subsides, there's definitely a sharp pain down there. (37)
9. Hurts if have erection after tucking	<ul style="list-style-type: none"> • The ... the only thing is, is that sometimes it can be a little bit painful when you get erect and you cannot change your position or change the positioning, sort of thing. (37)
10. Skin looks irritated	<ul style="list-style-type: none"> • [Interviewer]: And in terms of, like, the skin around the area where you tuck, like, did that ever, you know, get, like, red or, like, the skin, itself, does that look like it's irritated? [Participant]: Honestly, yeah. (37)

Supplementary Appendix SA1: Interview guide – Examples of potential interview topics and questions

<p>PART ONE – INTRODUCTION</p> <p>If the participant completed the timeline activity: Can you start by telling me about the timeline you created? Can you tell me about how you were feeling while creating your timeline? Can you tell me more about: (1) timeline elements? (e.g., colors, line style, images/text); (2) timeline points? (e.g., what does this point mean to you) Can you tell me which timeline points stand out/are most important to you?</p> <p>If the participant did not complete the timeline activity: Can you start by providing an overview of your experiences with gender-affirming care?</p>
<p>PART TWO – HEALTH-RELATED QUALITY OF LIFE AND EXPERIENCE OF CARE CONCEPTS</p> <p>Gender identity and expression Can you tell me about when you first started thinking about gender identity? When you started to recognize/understand your gender identity, did you: (1) talk to anyone about your gender identity? (e.g., friends, family); (2) change your appearance? (e.g., hair, clothing, etc.)</p> <p>Social Can you tell me about your school life? Classmates? Teachers? Can you tell me about your life outside of school? (e.g., hobbies, jobs, family life) Who makes up your support system? Can you tell me about the kinds of support you get from your support system? How do you think your social life will change/has changed after receiving [treatment]?</p> <p>Appearance and body image Can you tell me about how you feel about your face? Body? Hair? Can you tell me what you like about your appearance? What you dislike? Do you hide or cover parts of your body or face? (e.g., ask about practices like binding and tucking) How do you think your appearance/body image will change/has changed after receiving [treatment]?</p> <p>Psychological Can you tell me about your mental health? How do you think your mental health will change/has changed after receiving [treatment]?</p> <p>Voice Can you tell me about how your voice sounds? Can you tell me about how you feel about your voice? How do you think your voice will change/has changed after receiving [treatment]?</p> <p>Treatment and outcomes Can you tell me about your expectations for receiving [treatment]? Can you tell me about any outcomes/changes you have noticed while/after receiving [treatment]?</p> <p>Experiences of care Can you tell me about the first time you talked to a healthcare provider about your gender identity? Have you experienced any barriers to accessing gender-affirming care? Can you tell me about your healthcare provider(s)? Can you tell me about the information you were given by your healthcare providers? What can healthcare providers do to make seeking/receiving gender-affirming care better for you?</p>
<p>PART THREE – CONCLUSION</p> <p>If the participant completed the timeline activity: Looking back on your timeline, is there anything that you would add to it if you were working on it now?</p> <p>All participants: Looking back on what we talked about today, is there anything that stands out/is most important to you? Are there any key messages or ideas that you would like to share with the research team? Is there anything else you would like to share?</p>

Supplementary Appendix SA2 – Cognitive Debriefing Interview Guide

Introduction:

Hello <insert participant name> Thank you again for taking the time to meet with me today. As you know, our team is creating a new questionnaire to measure the outcomes that matter to youth who are receiving gender-affirming care. Based on what we learned during our initial interviews, we developed scales for this questionnaire, and now we would like your feedback on these scales.

During this interview, I will ask you to look at each of the scales and let me know what you think. We want to make sure that the scales are easy to understand and ask questions that matter to you. There are no right or wrong answers. You do not have to answer all questions, and you may skip a question if you wish. Please feel free to stop me at any time if you have any questions.

Scale Review (questions below are repeated for each scale)

- **Instructions**
 - Were you able to understand the instructions?
 - If not, how would you make the instructions more clear/easy to understand?
- **Timeframe**
 - Is the time frame: “in the PAST WEEK” easy to understand?
- **Items**
 - In your own words, what do you think this question is asking?
 - What did you think of when answering this question?
 - Was this question easy or hard to understand?
 - If hard, are there any specific words that are difficult to understand?
 - If hard, how would you change the words to make it clearer?
 - Was the item relevant to you as a youth seeking gender-affirming care?
 - If not, do you think this item is a relevant item to youth in general seeking gender-affirming care? Why or why not?
- **Response options**
 - Were the response options easy to understand?
 - What do you think about the response options?
 - Do the response options match your experience?
- **Overall**
 - Looking back at the items, which items did you like the most? Why?
 - Is there anything missing that you think we should add?
 - Do you think this scale measures an important issue for youth seeking gender-affirming care?
 - Is there anything else that you would like to add or share about this scale?